



Power up your portfolio with this battered technology stock: *The future is spelled lithium manganese polymer*

Christian DeHaemer

The recent market downdraft has left a plethora of top-tier tech names blowing across the market floor. This leaves *Taipan* subscribers with an extraordinary opportunity to get into some companies with excellent prospects that up to now have suffered from extreme valuations.

Due to timely profit taking on a number of *Taipan* picks over the first few months of this year, you should have ready cash to plunk down on some of these battered-down stocks.

In general, the purpose of *Taipan* isn't to point out obvious companies that are bandied around nightly by talking toupees. Granted, I'll gladly jump on an undervalued blue chip like pre-Y2K Oracle, before it was ever mentioned it in the same breath as Cisco, Sun, and Dell, and ride the tide of profits.

If you followed my advice last summer you are now up more than 350%. That's the way to buy blue chips—when nobody wants them. Now you are priced in low enough so a 10 or 20 point fluctuation doesn't mean anything and you can let it ride.

As I write this there are plenty of big-name stocks that are down 10 or 25 percent from their highs. You know what they are and most likely own them.

Opportunists

At *Taipan*, we like to peer into the future and find those stocks which will be next year's blue chips. We accept greater risk for a larger payoff down the road. The last month of Nasdaq trading has left these more speculative stocks 50-80 percent off of their highs. In some instances, these have more upside potential six to eight months out when the speculators return with another bankroll. And yes, they will return.

These former high flyers now have valuations that are more in line with their obvious

faults. I wish I had room to tell you about five or ten such companies that have been bleeding red on my radar screen. But you'll have to settle for the best of breed.

Assault and batteries

It has been obvious for some time that the major impediment to the expansion of mobile technology hasn't been the hardware, but the battery. You have had the ability to watch movies on your laptop for several years now.

Yet I never see this function in action on airplanes. They just don't have enough juice.

Mobile phones and PDAs constantly need recharging and the weight and shape of batteries is in need of

improvement. Smaller, lighter and thinner is the goal of every mobile device on the market—not just your wife (she'll kill me if she reads this...).

With the growth of the mobile market and the pressing demands for a better battery, the company that significantly improves on the current situation stands to earn an increasing portion of that ever-expanding and massive revenue pool.

Valance Technology is that company

Valance Technology, Inc. (VLNC-NASDAQ) designs, manufactures and markets

(over, please)

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**TAIPAN****Publisher:**

J. Christoph Amberger

Editors:James Passin, Brian Hicks
Christian DeHaemer, Siu-Yee Ng
Briton Ryle, Charles Wolpoff**Managing Editor:**

Ned Humphrey

Webmaster:

Alexander Nosevich

Editorial Assistants:David Byrd
Chung-Hau Ng**Art:**

Steven Kutz

Marketing Director:

Mark Gardner

Marketing Manager:

Kenneth Salzman

Fulfillment:

Tracey Holman

Classified Advertising:

Janet Wisner

Tours and Conferences:

Barbara Perriello

Customer Care: Call (410) 234-0691
9 a.m. to 5 p.m. Eastern Time
email: editor@taipanonline.com.

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www.taipanonline.com**USERNAME:****taipanmember3****PASSWORD:****8ball**

rechargeable lithium polymer batteries for portable electronics like laptop computers, mobile phones, PDAs and every other component of the digital Swiss army knife.

Valance is a ten-year-old company set up to solve the problems of advanced lithium polymer rechargeable batteries. The technology has reached the stage where Valance has started to ship product to two sizable contracts. *Taipan* believes it will experience tremendous revenue growth over the next two years.

I'll tell you more about that later. But first I'd like to talk about why I believe this company is the best play in advanced batteries.

Bleeding edge technology

Valance has over 400 patents granted or pending. Most are in the United States, but a significant minority are in Europe, Japan and Asia. The company has spent the past few years tweaking the technology for lithium manganese oxide which research suggests is the best material for use in lithium polymer batteries. From where I'm sitting, it looks like Valance is the clear leader in developing this specific type of battery.

Lithium manganese has several benefits over competing compounds as a cathode material, most notably lithium cobalt oxide, the most common one of the group.

A lithium battery is a complex electrochemical unit. Without going into the science, you'll have to trust me that the manganese polymer type of battery has several benefits over traditional lithium batteries.

First of all, it is less likely to blow up. Manganese is the most chemically stable of the lithium ion batteries—the others are cobalt and nickle. Unless you are a class action lawyer or a terrorist, you don't want a mobile phone bomb.

Thin is in

Lithium manganese can be shaped thin to fit in today's smaller mobile units. It has high energy density—meaning you can get more power out of a lighter battery. Lithium manganese polymer batteries have a smaller percentage (10 percent) self discharge per month than its main competitors, nickel metal hydride and nickel cadmium (20-30 percent)—which means they last longer per charge. Furthermore, lithium manganese polymer is also more environmentally friendly, with smaller amounts of toxic chemicals per unit.

The upshot of all of this is that it is thinner, lighter, safer and weighs less than its competitors. Manganese is also significantly less expensive than cobalt, as it is mined in the United States, Mexico, and Canada, among other places.

Form fitting

The Valance battery can also be adapted more quickly in form to fit OEM specs. Valance recently shipped batteries to Moltech Power Systems (formerly Energizer).

Valance stated that the size and shape of the battery in question did not exist four months ago, but with their unique patented technology they were able to design and produce a new battery with size and performance meeting their customer's needs.

Valance manufactures its products in Nevada, Seattle, Mallusk, Northern Ireland, Jurez, Mexico and has signed deals in Korea. It is the only company that casts its own anode, cathode and separator films.

Massive and expanding market

I don't have to tell you that the market for cell phones and the like is growing faster than porn on the Internet. Not only is the market for mobile communication units growing but also it may be expected that the lithium manganese polymer battery will grow at greater rate, taking over market share from the cylindrical cells in use today.

Because of their size and shape, the greatest inroads will be in high-end mobile phones. Ericsson, Sanyo and Qualcomm already use lithium polymer batteries. Motorola and Nokia are also supporting the use of this technology. And as you know, in the high tech world, today's cutting edge is next month's standard.

The estimates for this market are that 375 million units will have been shipped by the end of the year, with 1.7 billion shipped by 2005. This represents a 30 percent compounded annual growth rate and is one of the reasons you see Qualcomm trading at 328 times earnings.

Boomtown rats

Lithium polymer batteries represented 20 percent (320 million units) of the total (1.4 billion units) for the mobile phone market in 1999. This also has a growth rate of near 30 percent annually and is expected to reach 1.8 billion by 2005.



SHARE INFORMATION

CURRENT PRICE	\$18.75
MARKET CAP	\$645 mil
COMMON STOCK	34.4 mil. shares issued
INSIDERS OWN	24%

Bell Communications Research Inc. owns 6%

FLOAT	24.1 mil
SHARES SHORT	2.32 mil
PERCENT OF FLOAT	9.6%
AVG. MONTHLY VOLUME	14.98 mil
AVG. DAILY VOLUME	1.11 mil

The growth rates for laptop computers, PDAs and similar devices is expected to grow from 20 million units this year to 50 million in 2005. Again, lighter, thinner, smaller and safer is advantageous. We are talking about a battery that weighs two pounds and can run up to 15 hours.

Camcorders, portable games and music devices are also part of this expanding market.

Partners in crime

Needless to say, if this battery can claim a dominant market segment it will be like printing money.

Valance currently has contracts with several customers. One is Alliant Power Sources, which has several deals with the company for components and finished products that are used in the military and aerospace fields.

The biggest contract to date which has started shipments is with a yet-unnamed European cell phone OEM and is worth US\$15 million or 1.5 million units.

Its second contract is for Moltech Power Systems—formerly Energizer—for US\$2 million worth of batteries for use in satellites and cell phones. These are being produced in Northern Ireland and have already started to ship.

On March 2nd, Valance announced a new purchase order for lithium polymer rechargeable battery cells for integration into cellular telephone handsets. There was no further information disclosed on this new contract.

Except that the battery in question measures 34 x 48 mm, is under 4 mm thick and represents Valance's second generation of rechargeable power sources. The cell phone for which this battery is intended is designed to be one of

the smallest and lightest in the world.

Valance owns a vast amount of intellectual property based on lithium polymer battery technology. These patents cover basic components as well as the manufacturing process. They include the refining and mixing of powders for the anode, cathode and separator films. And they cover the casting of films and the manufacturing of the final product.

The company has spent some US\$20 million to buy production equipment over the last few months in order to ramp up production. It received US\$32 million from a share offering in December 1999. It has a current cash position of US\$28 million.

What value this?

Valance recently reported Q3 revenue of US\$408,000 and losses of 32 cents per share or US\$10.1 million, as compared to a net loss of 44 cents a share or US\$11.5 million from the same quarter last year. The nine-month numbers came in at a loss of 98 cents per share compared with a loss of 81 cents per share last year.

As I stated earlier, Valance is a development stage company. It is estimated that it will continue to report losses until fiscal year 2002. The best value method for this type of company is revenue and revenue growth.

Revenues are expected to grow from US\$1.2 million this year to US\$25 million by next June and US\$100 million by June 2002. These numbers are based on the current known contracts of US\$17 million as well as the growth in the market segment and the recently announced but unknown contracts with cell phone OEMs.

Given the number and frequency of recent contracts, these numbers may look ridiculously small in 18 months.

If you take the chart basing pattern as the bottom and assume that is the price the market was willing to pay for its patents and intellectual property, you will get about US\$300 million.

Valance's current market cap is US\$645 million. Netting out the US\$300 million leaves you with US\$245 million. If you assume a 10x revenue multiple that leaves you with US\$1.3 billion in market cap. Or a 101 percent gain over current levels.

However, if you take into consideration the estimated 300 percent plus growth rate and the current multiples

(...continued on page 4)





given to winning companies in industries with 30 percent plus compounded annual growth rates... and given the fact that these revenue projections may fall far short of reality... and the overall love affair the market has with telecom stocks during bullish waves, **then I don't see how you can pass this one up.**

In the end, the primary driver of this company's share price will be signed contracts with big-name companies coupled with a return of market enthusiasm. Valance is well off its recent highs of US\$40 and has met support at US\$18. It could easily return to these highs.

Valance is a strong buy with a conservative one-year price target of US\$40, with the added kicker of a hot market segment and best-of-breed technology. With a ramp-up of revenues and the right market conditions, I believe this could be a US\$100 stock. The chart suggests that it has found a bottom. Buy some today.

COMPANY CONTACT: Anne Soulier, Investor Relations, Valance Technology, Inc. 301 Conestoga Way, Henderson, NV 89015, tel. (702) 558-1000



Cell Robotics begins its marketing blitz

I was talking to a friend of mine, a dentist, who was laughing about buying a Biotech after it had fallen 60 points to the mid US\$50s only to see it fall another 25 points to the mid-\$20s.

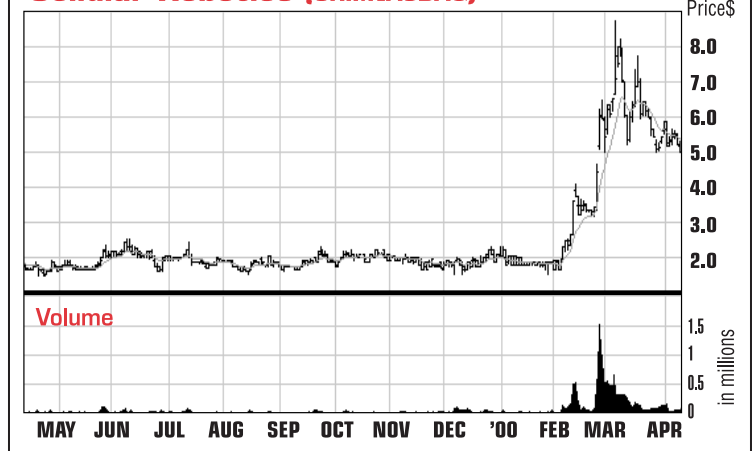
He's a funny guy and has the right perspective about not risking more than you can afford to lose. He now knows the lesson about not "catching a falling knife" or "stepping in front of a freight train," as they say. It is extremely risky to buy in a downtrend without waiting for some consolidation.

My recent *Taipan* pick, **Cell Robotics (CRII-NASDAQ)** has taken a hit along with the rest of the biotech sector but has managed to hold above our entry price.

CRII put out its year end numbers recently. They are as follows:

The company reported annual revenues of US\$1.42 million compared to revenues of US\$1.43 million in fiscal 1998, which ended Dec. 31, 1998. The net loss for

Cellular Robotics (CRII-NASDAQ)



1999 was US\$1.91 million, compared to a net loss in 1998 of US\$1.78 million. The company also paid a preferred stock dividend of US\$515,280 in 1999, and of US\$274,227 in 1998, bringing the 1999 net loss applicable to common shares to US\$2.42 million, or US\$0.31 per share, compared to net loss applicable to common shares in 1998 of US\$2.06 million, or US\$0.39 per share.

But as you know, Cell Robotics isn't about what it has done in the past. It is about marketing the Lasette and generating profits in the future. Cell Robotics has made some significant advances in those areas. The company announced that an undisclosed number of additional private insurance companies have agreed to pay for the Personal Lasette. Furthermore, Medicare has agreed to pay for a child's Lasette through an exception process.

Sales—the laser game

Sales of the Personal Lasette began in mid-December of 1999 in a limited way while the bugs were worked out. These problems are now solved and Cell Robotics is starting to aggressively market its product.

Full-page color advertising will be in diabetes journals with 1,300,000 readers, a targeted mailing will be sent to 50,000 people with diabetes and the company will demonstrate the Personal Lasette to attendees at the Juvenile Diabetes Foundation conference. All of this takes place before the end of May.

Upcoming conventions

- **Juvenile Diabetes Foundation** — May 17-21, Washington, D.C.
- **American Diabetes Association** — June 9-13, San Antonio, Texas
- **American Association of Diabetic Educators** — August 9-13, San Diego

Advertising

- *Diabetes Interview* — April, May: 50,000 subscribers
- *Diabetes Self-Management* — May, July: 500,000 readers
- *Diabetes Forecast* — May, June, July: 780,000 readers
- Direct-mailing to 50,000 people living with diabetes — *Planned: April 15 mailing date*



Buy ELBTF on weakness

By James Passin

After watching Microsoft rape one of my core recommendations, I was delighted by the “guilty” verdict in the anti-trust trial. Clinton’s craven trial lawyer cronies and insider G-men thugs finally did something to mitigate my pain.

I downgraded **Elbit Ltd. (ELBTF-NASDAQ)** from a Strong Buy to Hold after digesting the lowball terms of the Peach Networks divestiture. This downgrade was reported on www.taipanonline.com on March 3, 2000. Since my downgrade, ELBTF has declined 35% to US\$10 per share. From its February 2000 peak of US\$23, ELBTF is down 53%.

I’m not going to harp on my disgust with ELBTF’s strategic decision to hand Peach over to **Microsoft (MSFT)**. In my opinion, a number of factors forced ELBTF’s directors’ hands. While Peach would have been worth a multiple of its exit price as a public company on NASDAQ, the sale nevertheless highlights the sexiness of ELBTF’s bandwidth/wireless portfolio.

The decline in ELBTF’s stock price has created an excellent short-term opportunity for buying the stock. At current levels, ELBTF is trading at a 58% discount to Net Asset Value (NAV). The discount is excessive—even given lingering questions regarding the Peach sale. I believe that ELBTF will take concrete actions to realize value in other subsidiaries. **As an undervalued play on Israeli telecommunications technology, I recommend ELBTF as a Buy at current levels with a one-year target of US\$20 and a three-year target of US\$30.**

Wireless revolution

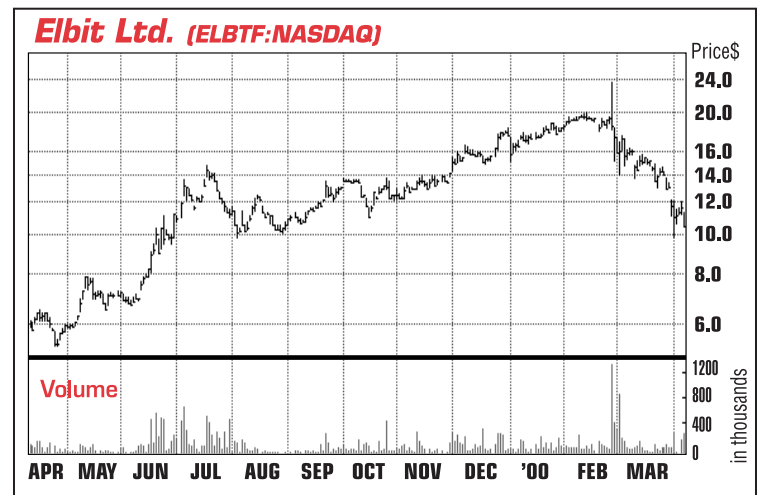
Forget Peach. ELBTF’s (50% held) Contop subsidiary is the potential blockbuster. Contop has developed a revolutionary technology for converting any cell phone into an electronic wallet. Contop is a leader in a wave of start-ups developing next generation “mobile commerce”—or M-commerce—solutions. Andersen Consulting projects that M-commerce will be bigger than E-commerce, a trillion dollar industry!

Mainstream investors are focusing on WAP (or Wireless Application Protocol). WAP is a new open standard which converts the languages of the internet (IP, HTML, XML) into a markup language specifically designed for mobile devices. WAP is becoming the de facto global standard for wireless internet.

Most of the competing M-Commerce solutions are based on WAP. Using a wireless internet device, you can make a purchase through your cellphone by accessing an online bank or credit account. While this type of WAP solution is clever, it adds unnecessary layers of complexity.

Contop leverages the existing infrastructure of any cellular network. With Contop’s technology, cellular operators

don’t need WAP to enable M-commerce. On the other hand, Contop can work alongside WAP. Based on its ultra-low cost and broad consumer applications, Contop has tremendous potential for immediate widespread adoption by cellular operators.



Contop’s M-commerce technology works by sending short pre-determined messages over cellular networks. The proprietary wireless payment system is initially being applied for vending machines, parking meters and fuel pumps. Using Contop, any cellular operator can become a player in M-commerce—without any massive capital expenditure. Furthermore, Contop allows cellular operators not only to provide a value-added service to customers, but to monetize their entire subscriber base by generating monthly cashflow through Contop purchase financing.

Aggressively building its brand equity, Contop has launched three branded applications: “Cell-F” (gas pumps), “Cell-U-Park” (parking meters), and “Cell-U-Vend” (vending machines). “Cell-F” is pronounced “self.”

If Contop were a private drawing board company, it could bring in venture capital investors based on a US\$40-60 million market cap. However, Contop has more than a dozen beta tests around the world with major blue chip customers. And Contop has just announced explosive news: Dor-Alon, one of the largest gas station companies in Israel, is rolling out Cell-F in all of its gas stations in Israel. This is one of the first commercial nationwide M-commerce rollouts in the world. As a stand-alone company on NASDAQ, I believe that Contop would be awarded a valuation similar to **Cellpoint (CLPT-NASDAQ)**, a US\$600 million dollar company. This would imply a per share value of US\$14 to ELBTF shareholders (pretax, assuming 10% dilution from IPO). The market is currently valuing Contop at zero.

(Continued on page 6)



ELBIT's ASSETS NOW INCLUDE:

Asset	Stake	Value (USD)	Valuation Method
PTNR	12.4%	\$270,000,000	Market
HyNex	94%	\$141,000,000	5x 2000 sales
Contop	50%	\$35,000,000	Not worth more than Peach
Cash	100%	\$65,000,000	Balance sheet
EVSN	53%	\$9,000,000	Market
Real Estate	100%	\$14,000,000	Estimate
Misc.	n/a	\$2,000,000	Private estimate
Disputed tax	100%	(\$14,000,000)	Worst case scenario
TOTAL	\$522,000,000	NET ASSET VALUE PER SHARE	\$24.31
PRICE	\$10	DISCOUNT	58%

Hard value

Partner (PTNR-NASDAQ) is ELBTF's GSM cellular affiliate. Since I have covered PTNR extensively in previous issues of *Taipan*, I won't spend much time analyzing the company. PTNR is Israel's third cellular operator. Despite a barrage of bearish forecasts from mainstream analysts, PTNR has been an outstanding success.

Arguably, PTNR was modestly overvalued in the mid-US\$20s. However, the subsequent technical correction to the lower teens has rendered PTNR fundamentally undervalued.

PTNR provides a rock solid support underneath ELBTF's stock price. ELBTF owns 12.4% of PTNR. Since PTNR has 182,000,000 shares outstanding, ELBTF indirectly owns 22.58 million shares, or roughly one share of PTNR for every share of ELBTF. In other words, if PTNR trades at US\$12, ELBTF owns US\$12 worth of PTNR stock.

Of course, ELBTF would incur a tax liability were it to liquidate its stake in PTNR. ELBTF's cost basis in PTNR is zero (thanks to the brilliant financial engineering of ELBTF management), so ELBTF would theoretically incur the full 35% Israeli tax liability. However, ELBTF man-

agement is, in my opinion, smart enough to reduce the tax consequences through an appropriate transaction structure. Furthermore, ELBTF could (in my view) sell its strategic stake in ELBTF to another PTNR affiliate for a significant premium to the market price.

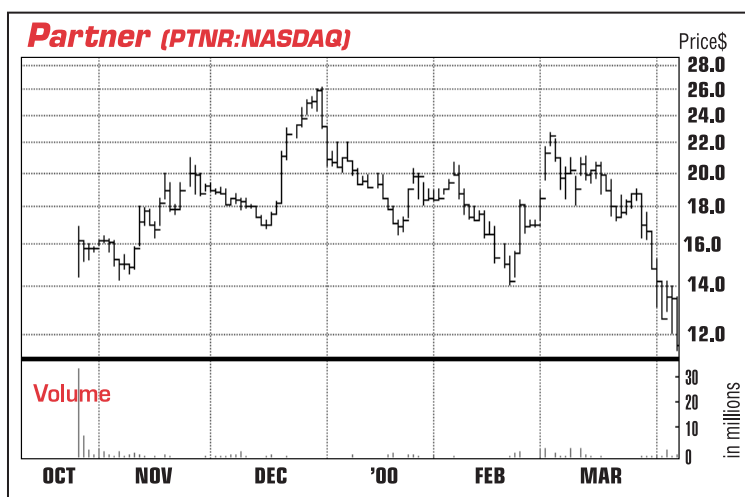
High bandwidth

HyNex (94% held by ELBTF) is an extremely interesting subsidiary. ELBTF recently executed an option to increase its stake to 94%. I believe that I may have been materially undervaluing HyNex in my long-term projections for ELBTF's NAV. As a pure play on high speed "internet infrastructure" with rapidly growing revenues, HyNex could sustain a US\$1 billion+ market cap as a standalone company on NASDAQ.

If there's one thing that Chief Technical Officers and telecom gurus tell you about running a telecommunications company (or "telco"), it's the importance of Quality of Service (QOS). Now, QOS may sound like the motto on a brass plaque awarded to Burger King's employee of the month, but it's actually the holy grail of modern communication networks.

QOS lets telcos monitor the flow of data traffic from end user to end user, allocating available bandwidth and preventing bottlenecks. Without QOS, telcos can't provide next generation services like voice over the internet or video-on-demand. Any high speed network needs QOS to be competitive.

HyNex's current product line offers QOS performance monitoring for ATM networks. ATM (Asynchronous Transfer Mode, not cash machines) is the core architecture for modern communications networks. ATM supports extremely fast and reliable data transmission, enabling cost-effective exchange voice and data transmission (I recommend reviewing HyNex's website: www.hynex.com). I believe that explosive growth of ATM backbones and ATM "overlay





networks” will continue—fueling continued growth in demand for HyNex’s highly regarded products. HyNex sells its products through OEM agreements with technology giants (hint: look at the KPN ATM network press release in March 1999).

I believe that HyNex may be preparing a revolutionary new line of QOS products for IP networks. IP, or “Internet Protocol,” represents the cutting edge core “packet switched” architecture of futuristic networks. I don’t believe that IP will render ATM obsolete (ATM is clearly superior for voice). However, IP does represent an extremely low cost solution for data-based networks. If HyNex’s leadership in the ATM QOS market is any guide, then the imminent launch of IP QOS products could multiply the company’s top line growth rate.

In my NAV calculation, I conservatively value HyNex at 5x 2000E sales. However, given the high valuation awarded to similar companies (Cisco has become the most valuable company in the world on the back of router and switch sales), this estimation may be too low. In my opinion, the market is currently assigning almost zero value to HyNex. HyNex’s products were recently certified by both MCI-Worldcom and AT&T.

Still stinks

ELBTF’s 53% ownership of **Elbit Vision Systems (EVSN–NASDAQ)** has been treated as a liability instead of an asset by the market. EVSN is a terribly run company with a fantastic technology. EVSN has a virtual monopoly on the market for optical inspection systems for textile manufacturers. Unfortunately, EVSN has been unable to claw its way back from the Asian crisis—and remains 88% below its 1997 peak.

As a controlling shareholder with a majority stake, ELBTF is required to consolidate sales and earnings from EVSN into own profit/loss account. Since EVSN sales and margins keep collapsing, ELBTF’s financial results look terrible from an accounting perspective. However, the quarterly

performance of ELBTF primarily reflects non-cash accounting charges consolidated from a separate public company.

It is my view that ELBTF will take concrete action to realize value in EVSN within twelve months. I value the EVSN stake at the market price.

Still the best play on Israeli tech

Thanks to outstanding financial management, ELBTF has US\$65 million in cash and zero debt. Other than a large option grant to the CEO, there has been no dilution to shareholders—even though ELBTF is a development stage tech holding company (compare this to the track record of ICGE or CMGI!).

While it is tempting to remain spiteful towards management following the Bill Gates “panty raid” of Peach Networks, you can’t build a profitable portfolio on vengeance. ELBTF managers have been punished by a 50% crash in their stock price. I doubt they will make the same mistake twice.

The severe correction in the stock has shaken out weak hands. Given the 1100% gain following my initial 1998 coverage, severe profit taking was inevitable.

In my opinion, it will take approximately 12 months for the market to forgive the lowball Peach divestiture. During the same period, I expect that ELBTF will take concrete corporate actions to realize value in Contop, HyNex, and EVSN. Given ELBTF’s robust financial condition, I would expect the company to make a strategic acquisition to expand its overseas marketing channels—and to continue providing seed capital to promising tech start-ups.

Based on the glaring discount to NAV, I am upgrading ELBTF from Hold to Buy with a one-year target of US\$20 and three-year target of US\$30.

James Passin is a Portfolio Manager with Firebird Management and Contributing Editor to *Taipan*. The views expressed are strictly Mr. Passin’s and not necessarily those of *Taipan* or Firebird Management.

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Ride the wave of the future, my man!

Buy this future giant now for 260% gains in the next year.

By Briton L. Ryle

"There is no reason anybody would want a computer in the home."

—Ken Olson, founder and president of Digital Equipment Corp., 1977

"This 'telephone' has too many shortcomings to be seriously considered as a means of communication. The device is inherently of no value to us."

—Western Union internal memo, 1876.

Predicting the future is a tough business. Notwithstanding the sentiments of my esteemed colleagues in the Reckoning business, human beings have an amazing ability to adapt to, and even embrace, change. For the investor, accurately predicting change is not nearly as important as recognizing that change will occur.

We'd all like to say that we had the foresight to buy Microsoft in 1987. Or Apple on IPO day. But the fact of the matter is, we probably wouldn't have.

"Too speculative", "unproven technology", "too expensive to gain popularity"—any number of excuses could have kept your money "safe." Of course, if you'd put all your money in Microsoft back then, you'd be filthy rich. But that also would have been a stupid investment. Greed makes us do stupid things (like thinking about how much one would have made investing in Microsoft).

Speculating for dollars

On the other hand, a couple grand still would've made you a small fortune, and actually would have been a very prescient move. With that in mind, I'd like to introduce you to **Wave Systems (WAVX-NASDAQ)**. Wave Systems is a perfect example of stock that could multiply a couple thousand times over the next five years; or it could go the way of jet-packs and nuclear ovens. I think we're going to be hearing a lot more from this Massachusetts company.

Wave has developed a secure payment system for digital content, like games, music, pay per view movies and so on. The Wave System is a completely new way of doing e-commerce. Like any totally new technology, there are some hurdles to get over before it becomes the giant I expect.

E-commerce is already a dinosaur

What's wrong with the present system, you ask. Well, right now, each time you buy something on-line, a separate, unique transaction has to be completed. Only after your

credit card has been approved can you gain access to the material you want.

It's a pain. It takes time to fill out the forms. And every time you buy on-line, you take a leap of faith that the vendor's server that stores your credit card information is truly secure. All it takes is one hacker getting into Amazon.com's database and tens of thousands of credit card numbers are laid bare. Call me crazy, but the fewer people that have access to my credit card number the better.

The Wave System offers an easier, less intrusive way to gain access to digital content. It's called the "trusted client platform" and it moves the transaction from the vendor to the consumer. The transaction takes place inside the PC, set-top box or PDA.

The Embassy (EMBedded Application Security SYstem) e-commerce system is based on a flexible, programmable chip set built into whatever device you use to access and download Wave-Enabled content. Each chip has a unique number assigned to it, and the capability to meter whatever content you want to purchase. It works essentially like a secure debit card in your machine.

When you go to use downloaded Wave-Enabled content, the Embassy device processes the transaction locally and gives you access to the content. The terms of the transaction are recorded in the Embassy chip. At certain intervals, Wave goes into the chip and uploads the stored transaction information. Wave Systems then debits your account and pays whoever is owed, less its fees, of course.

For example, you can sample a few songs from a CD to see if you like it. But even better, you'll have access to a huge library of music and only pay for what you actually listen to. Once you've spent the equivalent of the purchase price for any particular CD, it becomes yours. The music would be stored digitally at your home.

Disruptive technology

The first question is why. Why go through so much trouble to handle an e-commerce transaction? Two reasons. The first is cost to the companies that provide digital content.

E-commerce software and infrastructure is expensive. Memberships expire, passwords get passed around, membership terms change, and it costs money to deal with all of this. You have to buy and maintain a massive database to process, store and route all the transactions. Not to mention the investment in network hardware and services.

Each transaction at Amazon requires a secure direct line



between consumer and vendor. That's expensive, too. And server based e-commerce can only handle a limited number of connections at a given time. So not only does it take a massive investment to process e-commerce transactions, the current method may actually cost Amazon and other e-tailers money because only so many people can fit in the store at a time.

I don't know about you, but if there's a line coming out of one book store, I'll go down the street to the empty one. I don't care if it costs me an extra buck. And switching book stores on the Internet is as easy as typing [barnesandnoble](http://barnesandnoble.com).

Securing the Internet

The second reason vendors will take to the Embassy system is security. Customers now access content by using a password. There's no way to prevent one person from signing up and then giving the password to all his friends.

Also, it's very common for hackers to gain illegal access to a website and steal passwords. In fact, there's a bunch of websites that give away passwords to supposedly secure sites (mostly porn). And software for cracking passwords is readily available, just check out pwcrcrack.com or alpinenow.com.

Today, the password is the weakest link in the Internet security chain. The Wave system solves the problem because each user has a unique identity by virtue of the number embedded in the Embassy chip.

Pretty nifty so far. And it should be. Wave has been working on the system for over a decade. But the biggest hurdle for mass acceptance is getting the Embassy chip deployed on a mass scale and then getting the consumer to use it. Convenience and security will help. But there's still not enough digital content available for download to make adoption viable. The breakthrough that will make or break Wave Systems is digital TV.

Future prediction

Digital TV represents the convergence of entertainment and the Internet. And the FCC has mandated that TV stations offer digital broadcasting by 2003. It will take a couple of years for digital downloads to take the place of buying CDs and renting videos. But I don't think it's a wild prediction to say it's inevitable.

The home entertainment system of the future is likely to be a one unit combo—a computer/DVD/television/video game/stereo. Instead of buying a CD in a store, you'll simply download and store the digital information on your system. Same thing goes for movies and video games.

My wife and I constantly return movies we haven't watched to avoid the late fee. With Wave, you only pay after you've watched the video. No more late fees. To give you an idea of the benefit to consumers, Blockbuster took in nearly US\$700 million in late fees in 1999 alone.

Why buy a video game when you can pay only for the time you actually spend playing it?

I think you're starting to see how the Wave trusted client platform empowers both the consumer and the vendor.

Wave Systems entered into a partnership with the Sarnoff Corporation, called WaveXpress, to take advantage of opportunities in the digital TV area. WaveXpress uses the Embassy system to deliver digital TV and broadcast content to the PC. An inexpensive digital TV tuner card is the only hardware needed. Digital TV content can be broadcast to the PC at a rate of 19 megs a second. I believe WaveXpress is Wave's meal ticket.

Getting it done

I know what you're thinking. How is this system going to be distributed? It's fine to have such cool technology, but how's it getting into the home? Alliances, my friend, alliances. And Wave's got a ton of 'em.

Applied Micro Devices (AMD) has a motherboard design that incorporates the Embassy chip set. The Embassy system chip set can be added to a computer board for as little as US\$5. NEC Corporation is expected to include the chip set in some of their computers before the year is out.

Hauppauge is testing the system in their set top boxes. The Sinclair Broadcast Group, a huge broadcasting company that reaches 25% of US households, is currently testing the WaveExpress Digital TV system. Hewlett-Packard is a security partner, as is RSA Security, Alladin Knowledge Systems and Verisign.

Panasonic is demonstrating WaveXpress in its digital broadcast hardware, as is Teralogic and Pinnacle Systems. Other partners include Compaq, Sun Systems, CyberComm, Pollex Technology, IBM, Intertrust, Philips, TheGlobe.com, and InterVU.

Wave Systems holds several patents for its technology, which will be important as other companies attempt to move in on their turf. I mean, do you really think Microsoft will stand idly by while another company becomes a giant in the e-commerce space?

Standardized Wave

Right now, a consortium of bigwigs called the TCPA (Trusted Computing Platform Alliance) is attempting to establish some standards for secure computing. The TCPA was formed in October 1999 by IBM, Microsoft, Intel, Hewlett-Packard and Compaq. Its mission is to "develop a specification that delivers an enhanced hardware and OS based trusted computing platform." Sounds an awful lot like the Embassy system, doesn't it?

The TCPA is expected to come out with its specifications sometime this summer. You'll definitely want to have a position in Wave by then.

But the really scary part is, I've only told you about a couple aspects of the business. There are more, which I really don't have space to explain in detail. One that bears mention involves the Cyber-Comm alliance. Cyber-Comm



is an alliance of French banks and other companies seeking to establish a secure electronic banking system for France.

What you should do

Buy it. But remember: despite how good it sounds, this is a speculative investment. Since 1996, Wave has managed to generate a whopping US\$262,075 in revenues. (Yes, that's thousands and no, you didn't read it wrong). On the upside, Wave just completed a US\$122 million dollar round of financing at US\$34 a share, which gives you some idea what the Wall Street institutional crowd thinks the company is worth. And with only 42 million shares outstanding, Wave has managed to avoid serious dilution in its funding efforts.

Only one analyst follows this company. He estimates 17 million Wave-enabled users by year-end 2003. Based on this, projected revenues for 2003 are US\$633 million. If Wave is successful, these projections are extremely conservative.

As with investing in Microsoft in 1987, I don't think a large position is advisable. I also want to warn against chasing this stock. As a speculative, development-stage company, it will be among the hardest hit during corrections. **I recommend taking a position in Wave Systems under US\$25. I'm looking for a US\$90 price tag by the end of 2000.** Investor relations are handled by David Collins of Jaffoni & Collins, 212-835-8500. You can e-mail Mr. Collins at WAVX@jcir.com.



UPDATES

Overall, my positions didn't do too badly in the latest correction. The exceptions were **APA Optics** and **GeoWorks**. I'm still bullish on both companies and serious buying opportunities were there for the taking. GeoWorks hit an intra-day low of US\$14 on April 4th. It bounced back to close over US\$20.

APA Optics hit an intra-day low of around US\$20. Obviously, in retrospect, this was a time to buy.

I think **Illinois Superconductor** provides a good illustration. As a blanket rule, *any time a recommended stock goes up 700% in a matter of days, you should be taking some profits*. That doesn't mean sell all of the position. I still like ISCO and think it will be a great stock over time. But we're here to make money, and sometimes that means taking profits off the table.

Trailing stops

Of course, most stocks aren't going to jump like ISCO did. Make use of mental trailing stops to deal with these situations. I suggest applying stops after a position has made substantial gains, say 75%. Trailing stops should be used for protection against weakness in individual stocks.

Use mental stops, they require you to pay more attention to price activity, but you won't run the risk of losing a

good position on an intra-day price swing. Remember that market-makers and specialists will try to trigger stops to pick up cheap shares.

I don't advise using stops on new positions, before there are profits to protect. APA Optics is a good example. The combination of a lack of news and market weakness cut the price to less than half of my entry price. Many of the stocks I recommend are speculative investments. And I try to get there before the big news hits. Volatility is to be expected.

Pliant Systems and Fastcomm Communications

Good things are happening at **Fastcomm**. The re-listing application for Nasdaq has been completed. CEO Peter Madsen predicts the company will be profitable over the next two quarters. And Fastcomm made an excellent acquisition, **Cronus Technologies**. Cronus did US\$10 million in revenues in 1999. These revenues will go straight to Fastcomm's bottom line, effectively tripling cash flow. But the news fell on deaf ears as the market corrected.

Look for more news in the coming weeks. I anticipate a nice move up in the stock price as money moves back into the tech sector. Fastcomm is one of the better OTC plays. Re-listing on the Nasdaq should be worth at least a 25% jump in price. **Overall, I expect a double just in time for the summer doldrums.**

Pliant Systems has been unusually quiet. We should be seeing some news about the Pliant 3000 within the next month. Let's wait and see what kind of interest there is in testing the product before we make any decisions on how long to hold it.

Precision Optics, GeoWorks and Barpoint.com

Precision Optics hit fire-sale prices in early April, sitting around US\$15 for several days. I'm a little amazed that this stock has stayed at such bargain prices. I doubt it will last for long. As soon as the 100 gigahertz filter is announced this thing is going to rocket. **Take advantage of any opportunity to add to your position under US\$20.**

I mentioned earlier that **GeoWorks** had hit US\$14 on April 4th. I didn't have any cash available to grab some and I'm still kicking myself. I anticipate a run for this stock into July as companies take advantage of favorable licensing programs. Recent articles in Red Herring and TheStreet.com mention GeoWorks as a player in the wireless space. This will help raise awareness of the company, adding to the upward momentum of the stock price.

GeoWorks is a strong buy and should be a core wireless holding in any portfolio.

Barpoint.com has sold off substantially from its high of US\$25. This is another development stage company so I recommend giving it some growing room. Over the long term, relationships with Motorola and over 300 retailers will bear fruit. **I continue to rate Barpoint.com a buy under US\$15.**



Jump-start your IPO portfolio with New Focus!

By Siu-Yee Ng

The Internet has become an essential communications and transaction tool with increased data traffic. The volume of high-speed traffic over communications networks continues to grow dramatically, outpacing that of traditional voice traffic. According to International Data Corporation, the number of Internet users worldwide reached approximately 142 million in 1998 and is forecasted to grow to approximately 502 million users by the end of 2003.

According to Ryan, Hankin & Kent (RHK), the Internet and other data traffic is expected to increase 8,100% between 1999 and 2003.

This growth is primarily attributable to increasing consumer and business use, easier and cheaper access to the Internet and the large and growing number of personal computers in the home and workplace.

E-commerce in particular is generating enormous data traffic over communications networks as it becomes a critical strategic element of many businesses. Network service providers have had difficulty in meeting this increased demand due to significant constraints on high-speed access from existing communications infrastructure, which was originally designed to carry only voice traffic. Such constraints have caused network congestion, decreased reliability and made it difficult for network service providers to upgrade networks effectively.

To alleviate this bottleneck, network service providers are increasingly deploying next-generation optical networks that address the demand for high-speed communications. Optical networks transmit data by pulses of light through an optical fiber. Light in a glass medium can carry more information over longer distances than electrical signals over a copper medium. Optical signals are generated by lasers that produce light at specific colors, or wavelengths.

A variety of other fiber optic components are used to create, combine, isolate, amplify, split, channel and perform various other functions on these optical signals. Fiber optic components are split into two broad categories: actives, or opto-electronics, which process both optical and electrical signals, and passives, which process only optical signals.

Innovations at the fiber optic component level have historically enabled a number of major advances in optical networking systems. Traditionally, optical signals at only a single wavelength, or channel, were used to carry information in optical networks. With the invention of innovative components capable of separating light into different specified wavelengths for transmission in an optical fiber, network systems vendors began developing enhanced equipment, including wavelength division multiplexing (WDM) systems, which increased network capacity.

WDM solutions do this by transmitting data simultane-

ously on a number of different wavelengths along the same optical fiber. At the destination, these wavelengths are separated and the data extracted. Therefore, WDM technology increases the bandwidth of an optical network in proportion to the number of wavelengths transmitted. In addition to increasing the number of channels, component innovation has also resulted in an increase in the amount of data that can be transmitted per channel, or data rate.

Network service providers are continually upgrading the data rates of their optical networks. With increased data rates and numbers of channels, the amount of data processed by network equipment has increased dramatically. As the data rate and bandwidth between network equipment sites has expanded, the data rate between the equipment within these sites has not kept pace. As a result, there is increasingly a need for high data rate connections to link the equipment within a network service provider's site.

Component innovations have also led to the development of the fiber amplifier, resulting in a dramatic increase in the distance over which optical signals can be transmitted without regeneration, which is the process of converting signals from optical to electrical and back to optical to restore signal quality and strength. Regeneration requires large, expensive equipment, often in remote locations, which can be costly to deploy, operate and maintain.

Fiber amplifiers restore the signal strength without regeneration and significantly lower equipment, operations and maintenance costs. Prior to the development of fiber amplifiers, signal attenuation or loss limited the distance over which an optical signal could be transmitted without regeneration (reach) to approximately 70 kilometers. With fiber amplifiers, the reach of optical networks has increased to thousands of kilometers.

With improvements in fiber amplifiers, network equipment manufacturers are developing longer reach capability that has led to, among other things, all-optical networks that operate without any regeneration. These all-optical networks depend on advanced fiber optic components to enable extremely long reach. Service providers are demanding optical networks with higher channel counts to increase bandwidth. However, with current WDM technology, the number of wavelengths that can be transmitted (channel count) is limited.

Current WDM technology requires that data be transmitted within a defined range of wavelengths and with a large space between each channel. These limitations constrain channel count and the overall bandwidth. Network equip-

(...continued on page 12)



ment providers can increase the channel count by extending the range of wavelengths over which data can be transmitted. At the same time, reducing the spacing between channels with dense wavelength division multiplexing (DWDM) can also increase channel count.

According to RHK, the market for DWDM optical components is expected to grow at a compound annual growth rate of 51% from 1999 to 2003. As wavelength range and channel counts increase, service and network equipment providers will also need to effectively manage the increasingly complex flow of high-speed optical signals in a vast number of wavelengths.

Future systems will continue to require higher data rates to handle the rapid growth in data traffic. Growth in data traffic and price competition in the telecommunications market increasingly requires service providers to seek solutions that reduce their overall network cost-of-ownership.

In addition to the basic cost of equipment, service providers incur substantial costs in terms of space required to deploy the equipment, power consumption and on-going operations and maintenance. In order to continue to grow and upgrade their networks to meet higher traffic demands in a cost-effective manner, service providers need compact, low consumption equipment.

Opportunity knocks

New Focus, Inc. (NUFO-NASDAQ) designs, manufactures and markets innovative fiber optic products for next-generation optical networks under the Smart Optics for Networks brand. The company helps networking solutions with increased channel counts, higher data rates, longer reach lengths and new services which reduce overall network cost of ownership.

Its wavelength management and fiber amplifier products enable systems with extended fiber bandwidth, thereby increasing the efficiency of optical networks by transmitting a greater number of wavelengths in a single optical fiber. New Focus' wavelength management products also enable network DWDM systems to accurately, efficiently and reliably manage the vast number of optical signals by separating these signals into different paths that can be processed individually.

The company's interleavers are designed to double the capacity of DWDM systems by doubling the number of channels operating on a single fiber. Its WDM couplers are used to split optical signals on a single fiber into two different wavelengths on two fibers, enabling them to be processed on an individual basis. Its optical circulators are used for directing optical signals into the appropriate sections of a fiber amplifier and offer wide wavelength operation to accommodate many optical channels.

These circulators enable next-generation fiber amplifiers to amplify signals at multiple wavelength bands and signals travelling in both directions along a fiber. New Focus'

high-speed opto-electronics enable its customers to solve the bandwidth bottleneck between equipment within a network service provider's site. Its 10 gigabits per second (Gbps) transceivers are designed to be low cost, small sized and low-power solutions. Its advanced photonics tools enable network service and equipment providers to develop and test their next-generation offerings, including OC-768 products.

Speed racer

New Focus' fiber amplifier products enable the transmission of information at very high speeds over extended distances. Its products reduce the expense associated with amplification and regeneration equipment by extending the distances over which an optical signal can be transmitted. They offer wide wavelength range and low loss that enable the high power amplification needed to drive optical signals for the very long distances associated with next-generation all-optical networks.

Its products also enable network equipment manufacturers and service providers to offer products capable of managing and flexibly delivering bandwidth at the fiber optic component level. New Focus' optical circulators enable equipment capable of delivering or dynamically adding and dropping a single wavelength at any point in the network. Its tunable lasers are being developed to enable flexible networks that can be reconfigured to address changing data traffic patterns.

Its products help reduced overall network cost-of-ownership. The products are designed with compact form factor and low power consumption to reduce system space and power requirements. They are made for high volume manufacturing and offer several different lines utilizing the same or similar fiber optic packaging, thereby decreasing cost. Its fiber amplifier products increase the reach and number of channels within a DWDM network, reducing the expense of signal amplification and regeneration.

Buyers and sellers

New Focus sells its fiber optic products to network equipment providers and its advanced photonics tools to suppliers of components, systems and services-related products in the optical networking industry. Over 50 customers have bought its products, such as Agilent Technologies, Alcatel, Avanex Corporation, Corning Incorporated and Lucent Technologies.

Products are primarily sold through a direct sales force. Its efforts are focused on service providers and optical network equipment manufacturers. The company's direct sales account managers cover the market on an assigned account basis.

New Focus only recently began selling its fiber optic products to the telecommunications industry, and revenues from the sale of these products were generated since



March 1999. Total net revenues for the nine-month period ended December 31, 1999, were \$18.1 million, of which \$5.0 million, or 27.6% of total net revenues, were from sales of its telecom products.

Net revenues of \$15.5 million in fiscal 1998 and \$17.3 million in fiscal 1999 were generated from sales of its commercial photonics products. Net revenues increased in each of the previous seven quarters, with the exception of the quarter ended June 30, 1999. In that quarter, New Focus experienced component supply and integration issues related to new versions of some of its commercial photonics products, which affected its ability to meet demand. These issues were addressed in the following quarter with refined and improved manufacturing processes.

New Focus is expanding into China this year, so we'll have to keep an eye on this development.

Leaders phoning home

The president, CEO and director served since November 1997. Prior to joining New Focus, he spent nine years at Cornerstone Imaging, Inc. where he held positions as senior vice president, general manager of display division and managing director for Europe. He has nearly 20 years' experience managing different aspects of technology start-up companies, generally in the computer industry.

The CFO served since February 2000. Prior to joining New Focus, he worked at Komag, Inc. For ten years he served as Komag's CFO and most recently held the position of executive vice president, CFO and secretary. One of the co-founders has served as the chief technical officer since July 1990 and as the acting vice president of engineering since November 1998.

The vice president and general manager was a former senior vice president of marketing and sales and a former vice president of marketing at Asante Technologies, Inc. Prior to joining New Focus, he was employed by IBM's Microelectronics Division and was involved in setting up and running an IBM subsidiary in China.

One of the co-founders has served as one of the directors since inception in April 1990. He has also served as the chairman of New Focus' board of directors since May 1996. Prior to that, he served as New Focus' president and CEO and continues to perform research and marketing activities for the company. He is currently a member of the board of directors for Euphonix, Inc., IRIDEX Corp. and Gadzoox Networks, Inc., as well as on the board of several private companies.

Another director has served as the president, CEO and director of Sizzle International, Inc., a restaurant operator and franchiser corporation. Prior to that he served as the president and CEO of La Salsa Holding Co., an operator of restaurants throughout the United States.

New Focus has a director who was a former president of LightWave Advisors, Inc., a venture capital and business

development advisor to firms in optical communications, software and Internet companies. Prior to that he was a managing director and partner at C.E. Unterberg Towbin, an investment banking and venture capital firm, and its predecessor, Unterberg Harris.

Another director is an associate at U.S. Venture Partners, a venture capital firm.

Other directors include a partner in NorthEast Ventures, a venture capital firm, and a partner at Morgenthaler Venture Partners, another venture capital firm. New Focus' proposed ticker symbol is NUFO, and it is expected to price 5.0 million shares between \$14.00-\$16.00 during the week of May 8th.

For more information after the quiet period, contact *New Focus, Inc., 2630 Walsh Ave., Santa Clara, CA 95051-0905, phone: 408-980-8088, fax: 408-980-8883, e-mail: www.newfocus.com.*

Cutting Edge's First Annual Biotech Symposium August 23-26, 2000

It's been almost a decade, and finally the biotech sector is gaining ground. Back in 1991, the industry promised breakthroughs that sent shares soaring almost 150%. But this enthusiasm didn't last, and by the first five months of 1992 the sector had lost 40% of its value.

What can we expect from the recent biotech surge —another bust? No, this time it's for real. As I write this, the NASDAQ Biotechnology Index is up 144% in the past 12 months. And at one point by the index was up an astonishing 255%. Unlike 1991, major players like **Amgen (AMGN-NASDAQ)**, **Biogen (BGEN-NASDAQ)** and **Genzyme (GENZ-NASDAQ)** are now generating profits and have drugs on the market and in the pipeline.

Of course there are fundamentals at work, but this hardly explains the recent race to invest in biotechs. The roots of the biotech rally can be traced back to January 1999. A series of press releases and stories about the scientific progress towards deciphering the way human genes are constructed sparked a new interest. Now that the gene map has been decoded, there will be potential for explosive growth in pharmaceutical companies as well as companies that make tools for genomics research and product development.

The mapping of the human genome will revolutionize the drug and healthcare industry, bringing new treatments and drugs for cancer, Alzheimer's, depression and cardiovascular diseases, as researchers are able to drill down to the DNA and genetic level to find effective compounds and treatments for these disorders.

We'll meet with top management from leaders in the industry. Learn what you need to look for when evaluating a position in biotechs. Find out what the next biotech revolution is and what IPOs are in the pipeline that could be the next Amgen.

Don't miss the first annual biotech symposium with Brian Hicks and myself. Please call Agora Conferences at **(800) 926-6575** or **(561) 243-6276** to receive more information.



How soon until the Web is worthless?

By J.K. Riffin

Time to toss the Web? Say it ain't so!

Not unless you're talking about Web Hubble, maybe.

Things are just starting to turn the corner with Web-based advertising and commerce business models. **Yahoo (YHOO-NASDAQ)** is making money. Advertising is actually selling. Amazon's losses notwithstanding, the Web really *is* a place to do business now.

Why do these geeks have to mess it all up again?

Because the Web is jam-packed with as much useless garbage as it is with valuable, "need-to-know" content? Because for everything new that you find on the Web that you think is interesting and valuable, there are at least ten more things that you might find *more* interesting and *more* valuable, but you never seem to get to them all through the noise and clutter? Because sometimes it's easy to forget that the Web is only one piece of the Internet?

It's only been a little over five years since Mosaic and then Netscape got the party started. Nowadays, you have to snicker at certain little antitrust lawsuit over browser technology. Not that Bill Gates is going to have to start shopping for used cars, but if anything is clear with this Internet stuff, it's that nothing is forever.

And up until now, the Internet and the Web have been almost exclusively about personal computers, operating systems and Web browsers. Over the next few years, however, we're going to see more of a shift to alternative platforms and software applications. In other words, appliances other than PCs are going to take us to the *Drudge Report*, and programs other than Netscape are going to provide us with even more wonderful content distractions.

The Sculley Effect

No, not Gillian Anderson (though she certainly does have an effect!). I'm talking about Mr. Apple-Pepsico... the guy who fired Jobs. Seems Mr. Sculley wants to cash in on this Internet thing, and he's chosen Gizmoz and his vehicle. Gizmoz makes software that provides a new way to distribute content on the Internet. The company's tiny applications offer an animated message, then stream the real meat of whatever you like.

For gullible netizens, Gizmoz is about making a real go of "viral marketing," that is, the penchant we humans have for passing on cool things to each other. The company's software (each "gizmo") is small enough that to be shared via email through the power of word of mouth, Gizmoz hopes to have us all sending these things back and forth to each other.

The advantage for content owners is increased customer base, relationships, more traffic and higher revenues by distributing content through visually animated messages. The company is hoping to attract entertainment, music, sports and consumer content publishers to its technology, figuring

that content publishers will use Gizmoz to drive commerce, membership, audience and brand.

Gizmoz is not alone in this kind of endeavor. There are tens of very sophisticated little schemes to squirt content here and there over the Internet. Gizmoz, however, has Sculley, who has helped bring in blue chip investors such as Chase Equity Associates, AOL Investments, GE Venture Fund and 1-800-FLOWERS.COM.

But that's only part of the picture. OnePage is a new piece of software that allows surfers to cut and paste parts of various Web pages to another site. More than customizing portal views, OnePage lets you combine your Yahoo Fantasy Baseball team with your CNBC stock ticker. Needless to say, this is problematic for today's Web site giants who are only beginning to see the payoff on years of building a viable vehicle for Internet advertising.

Neither Gizmoz nor OnePage is anywhere near going public, but their bold moves threaten current paradigms.

Ripping the recording industry

If you got caught up in the MP3 madness of last year, you've long since "ripped" your CDs, that is, copied the music files from your CD and translated them into smaller MP3 format files that you can play on your computer or Diamond Rio player, or share with friends. Much like other forms of content on the Internet, the long-established business model of creating and distributing music is radically being altered. And the technology goes beyond the Web.

First off on music-related Web ventures: avoid Web-based CD retailers like the plague. Don't think for a moment that the battering of **Emusic.com (EMUS-NASDAQ)** and **CDnow (CDNW-NASDAQ)** stock prices makes them a bargain. All these companies do is sell flat \$11 boxes on their Web site and ship them to consumers. Don't be fooled by CDNow's traffic statistics. The awful truth is that these companies must pay hopelessly more to *acquire* a customer than they ever get back in the way of profit. And shipping charges have long been the life-saver for mail-order catalogs; please chuckle the next time you see a free shipping offer dangled by one of these companies on such low-margin items.

Which is not to say that CDs, or Web-based sales of CDs, are dead. They just won't sustain a business in themselves. CDs are, however, entering the next-generation format hit. It won't happen as quickly as the transition from vinyl and cassettes to digital. MP3 files are still big and unwieldy for dial-up users. Computers have yet to be fully integrated with home audio systems. But the wheels are turning, and so far the recording industry has done little more than blink and file a bunch of desperate lawsuits.

Enter Napster, the clever non-Web application (and royal pain-in-the-ass of university network administrators) that



lets users share MP3 music files. You “rip” your CDs, get all your tunes on your PC, and, with Napster, any of the other million Napster users can see and copy any of your music files and you can see and copy theirs. It’s the ultimate tape-copying party, and an intellectual property lawyer’s wet dream. Piracy aside, however, the Napster model (getting exactly what you want, bypassing banner ads and excessive marketing detritus) opens the door to other forms of content.

Napster will most likely be acquired or sued out of existence before it gets anywhere near an S-1 registration (MP3.com could be a potential suitor).

Which brings us to the real Internet music pick of the moment: **MP3.com (MPPP–NASDAQ)**. Not at all like a fine wine, but for lack of a better metaphor, the company has aged well since its much-hyped IPO of last summer. The company offers an innovative approach to promoting and distributing music over the Internet. The MP3.com Web site is a community for music-lovers in a wide variety of genres, and it represents a new and well-executed marketing channel for independent artists.

By leveraging all aspects surrounding the searching, communicating, reviewing, etc. of MP3 music files by both listeners and artists, the company is flourishing. With profitability projected for next year, MP3.com targets and markets artists who have not been signed by the major labels. This offers a powerful boost to unsigned bands trying to make it big, while providing music fans with access to the cutting edge of new music. In addition to marketing these bands (and collecting half of related CD sales), MP3.com sells advertising. As of February, the company boasted more than 10 million registered members.

Earnings have kept pace. As of 4th quarter, 1999, the company saw a 297% rise in online advertising and a 310% increase in offline revenues from its previous quarter, and more than tripled its sequential revenue growth. Yes, MP3 the format *and* the company are here to stay. The site is sticky, but more important, the company is executing.

After the IPO last year, the stock ran up quickly, then fell back just as rapidly. With another balloon rise in November, the stock dropped down to the US\$20–US\$30 range before taking its worst punishment over the past weeks. The company has aged well, using its IPO dollars to build infrastructure and marketing clout. Despite the market’s recent Dear John emails to most Internet stocks, MP3.com is a hotty. **At less than US\$20, MP3.com is the most attractive play in the Internet music space.**

Geeks without wires

As all Webhead readers know, the real news in alternative Internet connectivity is wireless. Last November, I wrote about **Nokia (NOK–NYSE)**—up 100% since 11/1/99; **Nortel (NT–NYSE)**—up 63% since 11/1/99; **Phone.com (PHCM–NASDAQ)**—up 27% since 11/1/99; **Aether Systems (AETH–NASDAQ)**—up 147% since 11/1/99; and

Nextlink (NXLK–NASDAQ)—up 84% since 11/1/99.

The wireless angle has gathered big momentum. Everyone wants it. No one has enough. I like two current wireless plays. One has been sitting out there in the open and the other has been hiding out in the OTC.

After a joyride of an IPO in February, **Palm (PALM–NASDAQ)** has settled in the upper US\$30s and low US\$40s. At US\$.06 earnings per share, Palm is profitable, but beyond that there are not a lot of shares of pure wireless Internet stocks available. And although Palm is not a pure wireless Internet play, it does provide what is perhaps the most realistic platform for wireless Internet communications. Let’s face it, even a Palm Pilot is preferable to a 3 by 6 line cell phone when it comes to reading news or sports. Institutional interest in anything involving wireless Internet will continue through the summer, and Palm is another technology sector victim that will get “discovered.”

Another hot area in wireless Internet is high-speed broadband wireless connectivity, and that is the business of **Worldwide Wireless Networks (WWWN–OTC)**. The company provides direct service links, frame relay, web hosting and network consulting services and serves business and home office markets.

In March, when Yahoo needed wireless Internet connectivity for its *Yahoo! Internet Life Magazine* Online Film Festival in Hollywood, they turned to Worldwide Wireless Networks for a fractional DS-3. A week later, the company was video-enabling 20 points of presence (POPs) throughout southern California. In conjunction with wireless video specialist **FVC.COM (FCVX–NASDAQ)**, the Worldwide Wireless network ultimately will deliver two-way video services to homes and businesses throughout southern California. FVC.COM handles video calls, conferences and broadcasts; Worldwide Wireless’s broadband network will carry these services at speeds up to 155Mb/sec.

The market for wireless broadband is projected to reach more than US\$3.4 billion in 2003. Feel like listening to all those cutting edge MP3 files in your car? How about beaming shipping and vehicle information to and from your fleet of 18-wheelers? **Currently at just over US\$7, WWWN is truly a ground floor opportunity.**

Only diamonds are forever

As sophisticated as Internet companies have become, it’s important to remember that still only half of U.S. adults have access to the Web. Add to that the markets’ current rethinking of Internet company valuations. The fusion of widely distributed technology and marketing capabilities that is the Internet forces all business models (right down to the very *de facto* standards we may take for granted) to be continually tested. When the Internet truly becomes a ubiquitous element in American consumers’ lives, it will have many more faces than just a simple Web browser.



WHAT TO BUY AT WHAT PRICE

What to Buy at What Price aims at giving you a general idea of how Taipan's stock picks are standing in relation to our initially recommended buying range.

Company	Exchange/Symbol	Status	Action
Fox Entertainment	NYSE:FOX	open	hold
Barnes and Noble	NASDAQ:BNBN	open	hold
"Red Hat, Inc "	NASDAQ:RHAT	open	hold
Interwoven	NASDAQ:IWOV	open	hold
Akami Technologies	NASDAQ:AKAM	open	hold
FreeMarkets	NASDAQ:FMKT	open	hold
Sangamo Biosciences	NASDAQ:SGMO	open	buy under US\$11.50
Silicon Laboratory	NASDAQ:SLAB	open	hold
ADFlex Solutions	NASDAQ:AFLX	open	hold
AVI Biopharma	NASDAQ:AVII	open	hold
Aviron	NASDAQ:AVIR	open	strong buy under US\$20
Closure Medical	NASDAQ:CLSR	open	hold
Micros Systems	NASDAQ:MCRS	open	hold
Modtech	NASDAQ:MODT	open	buy
Printtrak	NASDAQ:AFIS	open	hold
MedImmune	NASDAQ:MEDI	open	hold
Pharmaceutical Product Dev.	NASDAQ:PPDI	open	buy
Orbital Sciences	NYSE:ORB	open	buy
Visx	NASDAQ:VISX	open	buy
Millennium Pharmaceuticals	NASDAQ:MLNM	open	hold
CheckFree Holdings	NASDAQ:CKFR	open	hold
Univision	NYSE:UVN	open	hold
Optimal Robotics	NASDAQ:OPMR	open	hold
Ballistic Recovery System	OTC BB: BRSI	open	buy
Sensormatic Electronics	NYSE:SRM	open	hold
Human Pheromones	NASDAQ:EROX	open	hold
SunMicroSystems	NASDAQ:SUNW	open	hold
Media Arts	NYSE:MDA	open	hold
Oracle	NASDAQ:ORCL	open	hold
Safeguard Scientific	NASDAQ:SFE	open	hold
Internet Capital Group	NASDAQ:ICGE	open	hold
Cell Robotics	NASDAQ:CRII	open	buy under US\$5
Talk.com	NASDAQ:TALK	open	buy under US\$16
Clearworks.net	OTC BB:CLWK	open	buy under US\$14
VentureCatalyst	NASDAQ:VCAT	closed	hold
Conquer	NASDAQ:CNGR	closed	sold at US\$17.50
VerticalNet	NASDAQ:VERT	open	hold
Adv. Aerodynamics Structures	NASDAQ:AASI	open	price target: US\$12
Aramex	NASDAQ:ARMX	open	buy
Uproar	EASDAQ:UPRO	open	hold
Restaurant Brands	NZSE:RBD	open	buy
Fischer & Paykel	NZSE:FAP	open	buy
Unicharm	TOKYO:8113	open	buy
Elron	NYSE:ELRNF	open	hold
Elbit Ltd.	NASDAQ:ELBTF	open	hold
Orckit	NASDAQ:ORCT	open	hold
Hurricane Hydrocarbons	HHLFQ	open	hold
Hurricane Warrants	HUHY	open	hold
Ashanti Goldfields	ASL	open	hold
Surgutneftegaz ADR	SGTZY	open	buy
Suez Cement	SZCD	open	buy
Sasol	SASOY	open	buy
Monsenergo ADR	AOMOY	open	hold
TyumenAviaTrans	TVAVY	open	buy
Ventspils Nafta	VNFT	open	buy
Lukoil Preferred	LUKPY	open	buy
Xoma	XOMA	open	hold
Avant Immunotherapeutics	AVAN	open	hold
Williams Control	WMCO	open	buy
Exponent	EXPO	open	buy
Computer Learning Centers	CLCX	open	buy
American Quantum	AMEX:AFV	open	hold
Geoworks	NASDAQ:GWRX	open	strong buy under US\$35
Fastcomm Communications	OTC BB:FSCX	open	buy under US\$4
Pliant Systems	OTC BB:PLNS	open	buy under US\$10
Illinois Superconductor	OTC BB:ISCO	open	buy under US\$5
Barpoint.com	OTC BB:BPNT	open	hold
Precision Optics	NASDAQ:POCI	open	buy under US\$20
APA Optics	NASDAQ:APAT	open	buy under US\$40

• Positions may be modified in the free Weekly Taipan Hotline: 410-528-8228 and at <http://www.taipanonline.com/htmlcode/members/hotline/hotline.html> •