JAMES MORTON

INVESTING with young guns

next generation investment superstars

Featuring Dan Chung of Fred Alger Management, Incorporated

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by James Morton
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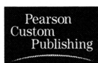

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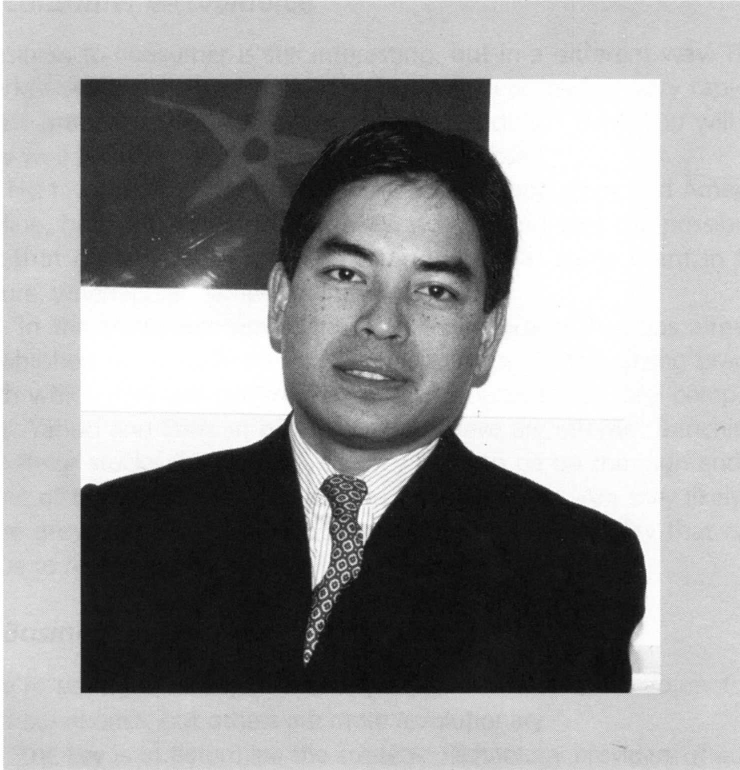

Dan Chung,
Executive Vice President
Portfoliio Manager/Senior Analyst

Dan Chung

Out-analyzing the competition

Became a technology bull and embraced the internet at exactly the right time

Backstopped Spectra, the top performing US diversified fund in the 1990s, which gained 1,200 per cent during the decade

Caught America Online at the infexion point in October 1995, which became a core holding and made a close to 1,500 per cent return

Selected Yahoo as pre-eminent in sector, up 20 times since purchase rather than rival Lycos, which rose a lot less

There are many ways to get ahead in business, but one time-tested method is to marry the boss's daughter. So when you realize that Daniel Chung is Fred Alger's son-in-law, you start to wonder. But then you learn he was a successful attorney at the prestigious firm of Simpson, Thacher and Bartlett, with no intention of entering the investment industry until he met his prospective father-in-law. Alger sized up the man about to join his family and decided he wanted him at the family firm as well. Several dinners later, Chung succumbed, left the legal profession and embarked on a new career in money management.

'Fred is one of the more driven, dynamic and persuasive, and also stubborn, people you'll ever hear or meet. He asked me whether I really wanted to be a lawyer. After convincing me that life as a lawyer was not that exciting, he then persuaded me that investment management was very exciting.'

Once on the inside, Chung found no special favours. Entry point was the lowest rung of research assistant. He was required to qualify as a certified financial analyst as a prerequisite for promotion to analyst. Chung credits this programme, in part, for easing his transition. In-house training, however, under the tutelage of the firm's seasoned analysts and portfolio managers, had the greatest influence on him. Fred Alger's investment approach requires analysts to make their own assessment of a company's financials and prospects. Independence of thought and robust analytical underpinning is central to the firm's superior investment record.

'Analysis is key. Financials "as presented" by a company will always attempt to cast as favourable a light on performance as possible within Generally Accepted Accounting Practices (GAAP) rules. The analyst's job is to make an independent assessment of revenue growth, margin trends, operating income, cash flow from operations and, of course, earnings growth.'

The word to emphasize is 'independent': independent of the company; independent of accounting conventions, which can often mask what is actually going on, especially at an acquisitive company; and independent of consensus research from the broker community.

Alger already had a reputation as a growth house when Chung arrived in the mid-1990s. His early experience reflected the firm's orientation. He was pointed in the direction of two themes that looked as if they might yield suitable prospective investments.

One was in industries undergoing consolidation. Well-run consolidators can rack up the sort of sustainable earnings growth that appeals to Alger, both by growing revenues and through the extra

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margin leverage that can come from savvy cost cutting. Chung made himself an expert in funeral homes, modelling the rapid expansion of Service Corp International, the leader in a sector that was consolidating and that, at the time, was announcing excellent results. Another early home run was Tyco International, a conglomerate that was rolling up companies in security services and electronics.

'From an analytical perspective, these companies were great training. Because of the rapid pace of acquisitions, careful financial modelling of the acquired companies and of expected returns to the acquirers was critical.'

Make mine technology

Chung's search for new growth areas was to prove a watershed. The year 1995 may not seem long ago, but six years in the new economy era can constitute half a career. In June of that year, Chung was promoted and given a new analytical brief for information technology services, with a small group of stocks under the heading 'internet' thrown in for good measure. He was one of the first professionals to suspect that the handful of internet-related companies, back then no more than a minor appendage, could turn into something much more important. Chung had been aware of the existence of the net since 1990 or so, which is one reason he saw its commercial possibilities early.

'I might have some advantage. I grew up in the heart of Silicon Valley. My father was a mathematics professor at Stanford University, which I attended. Stanford *alumnae* have founded many technology companies, including Cisco, Hewlett-Packard, and, more recently, Yahoo, Akamai and others. In that setting, academics created the internet and were doing, ten years ago, what everyone does now – sending e-mails, collaborating and exchanging files.'

Chung began to investigate how the internet might be useful, and, more to the point, how an understanding of those uses could make money for investors – specifically Fred Alger's clients.

'The most basic step is how do you get on to the internet? Most people that I was talking to came from science and education. They had access at work – as did many professionals – but, at home, they often had nothing. At the time, America Online was the only consumer-friendly version of internet access.'

Once Chung began to explore what the internet had to offer, it was almost inevitable that he would gravitate to America Online (AOL).

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'America Online was one of the easier companies to research. To evaluate the product, you just had to sign up. I spent a heck of a lot of time on the services. The key was clearly subscriber growth, which was terrific and accelerating. We looked at what it was charging per month and the economic returns from its subscription business model. Once people get online, they don't get off. They may switch providers, but they go online and stay.'

Possibly the single insight that tipped the scales came with the realization that the services America Online could offer would become *the* reason to buy a PC.

'Late one night, I realized I had spent more time on the computer in a single session than ever before, yet couldn't wait to get back online. Most PC software for consumers (accounting software like Quicken, tax preparation and home-office software) is essentially boring. I thought America Online would attract regular people.'

Great company, then. Pity about the financials or, perhaps more accurately, lack of financials. In 1995 a dearth of earnings and uncertain prospects offered little to go on in terms of traditional value metrics. Most professionals logged off and ignored the stock, but Chung was able to pursue his analysis because numbers are only one part of the process at Alger.

'The first thing to say is that our investment philosophy here has never been driven just by valuation. We don't buy or sell stocks based on a predetermined P/E multiple. We are not driven in our selection process by formulae or screens. Our process is driven by bottom-up research. So the first impulse is to spend a lot of time on the service, or in a company, learning its products.'

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Which suited Chung fine. The numbers left a lot to be desired, the cost structure and cash flow were horrendous, but everything else about the company put America Online in a class of its own. If you could get comfortable with the revenue projections, you just had to buy the stock – and buy big.

'We saw great subscriber growth, we saw a service that was revolutionizing PC usage – that could really make you go, "Yes! I want to go on the computer".'

Chung recommended that Alger portfolios own America Online, based upon what some saw as wildly optimistic forecasts of likely inter-

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net traffic and the subscriber base. In retrospect, he realizes now that what he got wrong was that his projections have proved too pessimistic, even though they were way ahead of what anyone on Wall Street was willing to contemplate.

'The internet is becoming an essential service like the telephone or a utility more rapidly than anyone predicted. I looked at our old model recently, and at subscriber projections. The most interesting thing is that America Online, by itself, has surpassed our entire market forecast for 1999. And, of course, the market has turned out to be all of us. Right? It's not 35 per cent of people who have PCs will go online, it's 75 per cent of us will have PCs and 100 per cent of the 75 per cent will have internet access.'

This was one of the earlier projects in which Chung became involved, and he emerged from hours online to champion purchase, a proposal which might not have found favour at every firm. Fortunately, the investment case suited the Alger philosophy, because America Online promised to deliver in spades on the thing that mattered most to the firm's founder: sustainable growth. The audience was also receptive, since many managers at the firm have a technology background; one reason why, since the mid-1990s, Fred Alger Management has normally had at least 25 per cent invested in technology stocks. Chung's timing could hardly have been better. He caught the new wave of investing just as it was beginning to build.

Growth, growth and more growth

Much of the success at Fred Alger Management has come from buying growth – and not just any old growth, but the fastest growth it can find. Companies that are leaders also attract the team at Alger. And leadership inside a fast-growing sector combines the best of both worlds, because leadership usually links to the fastest growth, especially in sectors that themselves are high growth. Chung concedes that his firm has an ingrained bias on the topic of growth, but, hey, why knock what works so well? One trade-off between two potential positions captures the firm's investment hierarchy rather neatly.

'We like to buy the fastest growing companies, the leading companies: often those are the most expensive companies by P/E ratio measures. A couple of years ago we looked very hard at both Lycos and Yahoo. Lycos was cheaper, based on the numbers, and Yahoo expensive, but Yahoo was the leader.'

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Which led Chung to focus his analysis on Yahoo, though he was careful to make sure his research placed the company in the context of its competitors.

'A lot of people (especially die-hard techies) thought Yahoo's manual directory classification was a poor approach to organizing the web, and would be killed by futuristic "spiders" combing the web [more automated search paradigms like AltaVista]. But using the site convinced me that Yahoo had superior ease of use. Its directory structure mapped closer to the way people actually think about searching for information, rather than a "key word" mapped against the entire web – the approach of the massive search "engines". Also, by avoiding fancy graphics on its main pages, we noted that Yahoo was, and remains, one of the fastest sites for flipping through pages. Finally, Yahoo's decision to focus on aggregation of content and not on creation of its own editorial made it more attractive as a partner to established content creators, and so a better business model.'

So not merely leadership, but in-built advantages likely to lead to greater growth, especially as Chung had a couple of questions over the numbers Lycos was showing.

'Analysis of their acquisitions and traffic metrics convinced me that there was recirculation of traffic within Lycos, a lot of it from acquisitions, that did not represent true-user loyalty or "depth" of use for their site.'

Chung came away, convinced that Yahoo would leave its competition trailing, and strongly recommended purchase. Alger made it one of the firm's largest holdings.

The company is the epitome of a growth stock. In modern markets, investors pay up for growth, so 30 per cent annual, if sustainable, is worth more than twice 15 per cent. Leadership also merits a premium. How much? Further comparison of Yahoo and Lycos from an interview given to *Smart Money* towards the end of 1999 is instructive:

'Yahoo in early 1998, at approximately $15 (split adjusted), looked tremendously expensive to many investors, sporting a $3.5 billion market cap. Its market cap to sales was 60 times, and it had a P/E that was "not meaningful". Yahoo's market cap today is roughly $90 billion, and the stock is a "20 bagger". Thinking Yahoo "overvalued", one might have invested in its "cheaper" competitor, Lycos, and the return, while outstanding, would have fallen short by a factor of four.'

No surprise, then, that a succinct definition of how Chung operates, and why the Fred Alger formula has been so successful, contains the 'G' word. Many times over – and at least once per sentence. 'We buy companies that have the potential to grow the fastest and dominate in the biggest markets.' With the 'L' word usually not

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far behind. 'We look for the next generation of leading companies.'

There is still the matter of value. In case this point is not clear it should be stressed that Chung never loses sight of earnings, which are the most important valuation driver. Indeed, the whole culture at Fred Alger Management revolves around the search for superior earnings growth. What separates Chung from others is his willingness to look through today's reported profit, or lack thereof, and to see the earnings power of tomorrow. Leadership in a rapidly expanding sector is a positioning that can infer superior earnings growth.

'Often companies with the highest market cap/sales and market cap/operating income are those that are moving the fastest to claim new markets. The main controversy following Amazon's IPO was its "sky high" valuation relative to bricks-and-mortar book retailers like Barnes & Noble. Initial appraisals focused mostly on the book and music categories that Amazon was in or "clearly going to be in" and attempted to estimate the share of online sales to offline, and then Amazon's share online.'

Such a narrow analytical structure could not do justice to the intrinsic value created, the platform and all the other elements that make Amazon a best of breed. But what about positive cash flow and post-tax profits? Exceptional growth and instant profitability do not often go hand in hand. Establishing leadership is akin to staking out prime property in a Kansas land rush and gobbling up all the adjacent plots, for good measure, to stifle potential competition before anyone can pose a serious threat. Chung comments on the impact the drive for market position can have but, at the same time, makes no apology. Costs have to be incurred. Coming second is nowhere near as interesting.

'Sometimes, to achieve long-term goals, heavy investment is required, and operating losses are incurred: America Online's "carpet bombing" marketing in 1994–6; Amazon's investment in owning its distribution and fulfilment capability in 1999; Ebay's ongoing investment in its highly trafficked site, while simultaneously adding over 50 new regional sites, automotive auctions, and suite of new services to improve its customers' experience; Yahoo's investment in its international properties, for which 2000 looks like a breakout year. The best investments are companies that continually expand their business's long-term vision and opportunity.'

The best investments are companies that continually expand their business's long-term vision and opportunity.

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There is an interesting convergence in Chung's approach with the way top managers talk about strategy. The bad news for investors is that, with new economy companies, out go simplistic rules and ratios, to be replaced by time-intensive business analysis. Shortcuts like historic Price/Earnings ratios have no place here. A holistic approach is essential.

Fundamentals come first

Fund managers are paid to show judgement and make decisions. Chung is firmly in the camp of those who believe that investing by numbers is not likely to produce above-average returns. You need something more than quantitative analysis. Which is why he repeats, several times in our conversations, that, as a firm, 'We're not driven by a financial metric like a P/E, or P/E to growth. We're more driven by the fundamentals.'

His first instinct is to find the rationale for the company and a business model that makes sense: one like America Online, which grabs you saying 'buy me'. Once the business passes this test, Chung turns to management as an equally important dimension. All of which calls for primary research at the company and in its market.

'The most important thing I do is spend time talking to management, competitors, customers, industry gurus, IT consultants and just about anybody else who might be able to educate me about a company or its industry.'

Only then is he going to prepare a full analytical package, creating a detailed financial model of prospects based on primary research.

A reasonable question, at this point, is whether all this effort – and an enormous amount of effort goes into building these financial models – is worth it. On one level, the answer is easy. The need to understand whether growth is sustainable leaves no alternative but to learn the business backwards. And that knowledge is then encapsulated in the model. As for the numbers, some level of error is inevitable, but results can come in surprisingly close to projections. Chung built his first set of pro formas for Yahoo when it went public in 1996. The model almost matched reported numbers in 1999. In the fourth quarter, Yahoo's revenues were $201 million. Chung's model had predicted $200 million. The model's profit-and-loss estimate proved to be within a few hundred thousand dollars of the actual results. The first half of 2000 saw similar tracking. The devil can sometimes be uncovered if you dig in sufficient detail. Still, Chung is cautious in interpreting such accuracy.

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'Is this total blind luck? I have no idea, but I like to think that I didn't waste my time separately modelling Broadcast.com, Geocity and Yahoo. I track their individual costs including sales and marketing, general and admin. and R&D lines.'

His diligence and drive to get underneath headline numbers go way beyond where regular investment coverage ends. Only through digging one layer down do discrepancies in earnings-growth forecasts emerge. Which is what gives Fred Alger an edge over competitors who stop short of this degree of detail. Through identifying variation from *Wall Street* consensus, Chung and his cohorts earn their keep and spotlight stocks likely to outperform. Amazon was a large position for several years, as he explained in a 1999 interview:

'Amazon widely exceeded analysts' original revenue estimates for the company, and continues to raise the bar today. Why? Because it has rapidly moved beyond its successful book and music core, adding video, consumer electronics, auctions, z-shops, toys and home improvement to its online business. As its operations have expanded, so have our near-term and long-term revenue and profit estimates.'

Here the net, there the net, everywhere the internet

The early investment in America Online led to a series of investments in internet and technology companies. Chung saw the net as a catalyst for change in behaviour across a whole range of products and services. No surprise then to find that portfolios at Alger contain many net-related stocks such as infrastructure software, communications equipment and business-software applications companies. The top holdings vary by account and are a moving target but, as of October 2000, the ten largest in the fund run by Chung included pedigree names such as Ciena, Ebay, I2 Technologies, PMC Sierra, and Software.com. Also high up were EMC and Sun Microsystems, both of which benefited from the boom in new-economy investment. It is hard to pin down the precise percentage of Alger's portfolios that could be classified as net driven. Suffice it to say that the weighting is significant. As Chung points out, demarcation is difficult, and getting more difficult.

'Lines are beginning to blur. Sun Microsystems clearly wouldn't have the multiple that it has now if it hadn't been for the internet phenomenon. Sun had great performance on top and bottom line, but it is also trading at multiples we didn't see in 1996. And part of that is because the company is viewed as key hardware plumbing for the building out of the internet.'

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Having picked up early on pioneers who went public first, Chung also examined, with the same sort of rigour, businesses that are the most likely beneficiaries of this explosion of activity: technology companies finding a new lease on growth by bringing established businesses into the networked economy and on to the net. Enterprise computer companies stood to be frontline beneficiaries from this expansion.

'Internet computing has greatly increased the performance and reliability requirements for servers. At the high end of processing power in the server market are mainframes; in the middle, Unix-based servers; and, at the bottom, NT/Intel servers. The standard view, four years ago, was a pyramid: mainframe at the top, losing market share to Unix servers. However, Unix was losing share to Wintel servers, Microsoft NT and Intel-powered servers from Compaq and Dell, because NT servers were also increasing in computing power and therefore gaining at the lower end, where price was more sensitive. This pyramid of markets and market growth assumed static relationships among tiers and implied processing power advancements. The model failed to take into account the demand for processing power, reliability, scalability, and all other important aspects of a server system.'

And here is where Chung's original research reaped huge dividends for Alger's clients.

'Internet businesses operating 24 by 7 had no tolerance for downtime or reboots. Consumer and business applications, like e-mail, chat and interactivity, were far more demanding than "file and print", the biggest use of NT servers in the enterprise. Interviews with webmasters reinforced the volatility of traffic patterns, the tremendous growth of traffic, and the reliability required.'

The next connection was crucial.

'The internet increased, by a quantum step, market demand for processing power. This increased requirement shifted the minimum level of performance upwards, right into the sweet spot of Unix servers. NT servers could not deliver, in particular, the reliability needed, so would not gain market share as quickly as pre-internet. Looking into which Unix vendor best met this new demand for performance, we surveyed benchmarking engineers who test servers and databases, and interviewed ISPs [Internet Service Providers], telecommunications and internet-hosting companies like Exodus and UUNET. It was clear from their responses that Sun was the internet leader.'

So Chung recommended Sun as a core holding while most of the market's attention was elsewhere. Those first purchases returned over 400 per cent profit in under two years.

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The Grand Central Station of information

Once a company showed strongly on the radar screen as sectoral leader, and market validation of the business case justified a full analysis, Chung returned, as he does for each prospect, to the preparation of a multi-layer financial model. Time to go direct to the company – another prerequisite of a thorough financial forecast.

'Sun's never actually broken out revenues by product line, but, by talking to people who are engineers, it quickly became apparent that in their core, mid-range and upper-end workgroup servers, they were probably growing at over 50 per cent, while workstations had been holding them back. The P/E then was around 30 times, but they had this business growing much faster, and customer pressure on performance requirements meant less pressure on price. The question everyone was asking was, "Can the server handle traffic and not go down?" While most analysts were focusing on Y2K, we saw demand accelerating and the potential for over 30 per cent growth (which duly arrived).'

> **Identifying likely losers is every bit as important as picking winners.**

Of course, identifying likely losers is every bit as important as picking winners. The internet is not an unmixed blessing, even for new economy companies. One well-known name where Chung still has to make up his mind is Oracle.

'For Oracle the internet is a plus, but also a minus. It's a challenge to their business model. Can they capitalize on their position in databases, and sell applications to the faster growth markets in customer relationship management, B2B [Business-to-Business] exchanges and supply chain management? They have to re-architect a lot of their software and they face a host of new competitors who all want to dethrone Microsoft and Oracle.'

Not just businesses but entire sectors can come under attack, with established companies outflanked overnight.

'ERP [Enterprise Resource Planning] companies like Baan and Peoplesoft have been dethroned pretty rapidly. It's interesting to see how some companies were caught off-guard by the internet.'

Alger was not caught off-guard, courtesy of in-depth field research by Chung and his colleagues.

'Customers were buying ERP software to fix Y2K, but were not happy. Many complained about high price, long, difficult implementation, and, ultimately, non-delivery of promised benefits and features.'

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Which was one red flag raised over forecasts, even for the market's favourite SAP. Chung dug deeper.

'Analysis based on new contracts, average size of contract, and how SAP recognized revenue over the period of implementation showed deceleration in new business and an end to the flow from the backlog of big deals sold in 1997 and 1998.'

Alger, as a firm, largely stayed away from the ERP sector in the late 1990s, sensing instability to come, and so avoiding significant stumbles suffered by SAP, Peoplesoft, JD Edwards, Oracle, and others in the ERP software space starting in 1998 and continuing through 1999 and on into 2000.

New economy, new values

All the number crunching in the world is, on its own, insufficient in this environment. All the research conceivable is still not enough. Every investor still has to grapple with the elusive issue of valuation and, as Chung admits, this element of the process is less than ideal, especially when evaluating internet or hypergrowth companies with little or no near-term earnings.

'There are a variety of yardsticks that analysts frequently refer to. We use the terms "yardstick" and "evaluate" as opposed to ratios and rules in a deliberate fashion: ultimately, valuing and investing in many, if not all, technology companies is an art, not a science. Most of these yardsticks are useful only in comparing one internet company to another internet company.'

Yardsticks suffice only because of the depth of research that enables Chung to use them in the context of a thorough understanding of the company and its markets. Factors that affect the interpretation of the yardstick include: 'The size, structure and growth of the market addressed by the company, the number and relative position of competitors, the potential for new competitors to enter, the advantages and disadvantages of the new technology, new service or new way of "doing business" *vis-à-vis* the old, and how rapidly the company will change a marketplace and an industry.'

Which begs the question, what are some of these yardsticks? Ideally there will be earnings visibility.

'We love companies with lots of earnings, operating margin expansion, revenue growth and selling at reasonable P/Es.'

But that combination of characteristics is not always on offer, so an investor has to become more creative. In those circumstances, Chung proffers several options as worthy of consideration.

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'Market capitalization [MCAP] to sales, MCAP to gross margin dollars, MCAP to operating earnings or cash flow, and MCAP per subscriber/customer. We might use forward projections of operating earnings. I run discounted cash flows. But usually more as a methodology to look at very conservative-based value for checking my sanity and market sentiment. Then sensitivity analysis gives a feel for the range of stock prices in a bull or bear case.'

Anyone looking for a definitive set of quantitative benchmarks will, however, be disappointed. We are in the realm of relativity and dealing with degrees of difference, not absolutes. Chung is even cautious about ranking his yardsticks in order of importance.

'We do not view any one as most useful. And, though looking at such yardsticks across different internet companies can, on occasion, provide some sense of valuation, our investment philosophy is not driven by an arithmetic calculation of the "under" or "over" valuation on any given stock. In our experience, many of the best investments have never been "cheap stocks".'

So where does that leave a technology investor? Unfortunately, with more work still to do; at least under Chung's approach, where fundamentals overpower formulae.

'I get annoyed by over-focus on P/E or PEG ratios or other metric nonsense. We try to find the best growth, companies where fundamentals are improving and where markets are expanding. I try to understand all that, and then keep up with the news and noise in the real world. Valuation usually takes care of itself if I get that right.'

A researcher's work is never done

The amount of analytical ground covered by Chung and his team in researching potential investments is impressive. This has been alluded to earlier in the context of specific recommendations; but it is important to revisit the process to appreciate why his results are superior. Experimentation with the product was a factor in the decision on Yahoo, though the key insight that Chung took away from this exercise was not that one portal was better than another, but that leadership was likely to be validated by user behaviour.

'You get accustomed to a particular service. Whether it's the best or not doesn't really enter into most people's calculations. I don't know many consumers who would spend an equal amount of time every day using three different services just for the fun of it. As long as your service doesn't let you down, you stick with it. So the question is,

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which do you go to first? Initial use becomes very important. And it's usually the brand or market-share leader that you get led to.'

No easy let-off for Chung, who forced himself to undergo first-hand experience of all the majors.

'I formulated ten different things to find or do on the internet. Then I tried each on Yahoo, Lycos, American Online, MSN [Microsoft's online service] and Excite and appraised the experience. I also talked to companies that were doing early e-commerce deals with them.'

A company that survives a rigorous examination of its business case, both in terms of users and customers, also has to pass a test of its earnings growth potential. After all, profit is what Alger ultimately cares about: growth at the top, but also, in due course, at the bottom line. For every recommendation, Chung's team will have prepared a detailed forecast and run sensitivity scenarios, both to test projected profit and to prepare for the grilling from portfolio managers.

'We're committed to earnings models for all our companies. We have multi-year cash-flow models, and we test the models. The models reflect not just a series of numbers, but things like how many people do they need to grow, how much investment in marketing are they making, are they getting a good number of customers from this marketing? What is the effect of rising or falling telecommunications costs? We model to make sure that we really understand the company and its business.

We don't believe anyone can really understand a company unless they have put together and analyzed its financials.

'A lot of people ask us, "Why don't you just use the Street model?" Well, we don't. We don't believe anyone can really understand a company unless they have put together and analyzed its financials. Looking at someone else's model leaves questions – what assumptions, what sensitivity to changes, etc. Some analysts have terrific models – it is not that their models are bad, or even worse than ours. It is just that I can't understand all that complexity by looking at someone else's work. I need, and Alger requires, that we work it through ourselves.'

The degree of detail Chung requires of himself is almost scary, and goes way beyond what individual investors could realistically hope to accomplish. Still, it is useful to understand what is involved, if only to marvel at the information shortfall. And, for Chung and his colleagues, here is the explanation for their outperformance.

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Another point worth making is that this intensity of analysis is not forced. What might seem a drudge to some makes Chung's eyes light up. He loves what he does. You can sense enthusiasm for the challenge inherent in deconstructing a complex new-economy company like Amazon. He revels in the task of learning more about the business than his competitors, and emerging at the end of the exercise with a better understanding of every facet of its operations.

'I've got every detail you can imagine on what Amazon did in books in the US, in Germany and in the UK separately, and for music, and what their gross margin might be in books or music, with new accounts, and then distribution costs and shipping costs. Toys, electronics, home improvement items – each has a separate model. For z-shops I'm modelling the number of shops, the average items per shop, items added per day, how much they sell per quarter, the average price of those items, how much they get in listing fees. All of this is based on my estimates of how many Amazon customers might visit that site and what they buy: their look to book.

'Why do I do all this? Someone will say, "Yes, but it comes out with a gigantic loss, so how could he possibly buy? What's the metric that tells him to buy this?" Well, it isn't a single metric. What it is is trying to understand – and modelling intensely – the real business.'

Readers can see where all the work goes. Figure 2.1 encapsulates less than one in ten line items in the base-case model that Chung created as the primary input to Fred Alger's investment evaluation of America Online. Each e-commence relationship, for example from GTE Yellowpages to Cybermeals, has its own forecast. There were seemingly endless iterations; and, of course, since a model is a living reflection of the business, it is instantly updated the moment new information is gleaned either as a result of an event, such as company news, or indirectly through research at another situation that impinges on AOL's activity.

The level of detail is almost overwhelming, but the process to piece together the data and understand all the relationships means that, when complete, Chung can present to his colleagues with a high degree of confidence. Almost inevitably, original in-house analysis generates insights that drive the ultimate investment decision and allows Chung to extract one or two pivotal recommendations for the portfolios. Amazon was added in February 1998 at a split adjusted $5 and sold when close to $100 under two years later.

'What we look for in an internet stock, where valuation questions are the most philosophical, is where we think consensus opinion about a company is wrong. They either over or undervalue the company.

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Figure 2.1 Extract from Fred Alger Management model of America Online, compiled by Dan Chung

AMERICA ONLINE										
Segment	***Q1/99***	***Q2/99***	***Q3/99***	***Q4/99***	***1999E***	***Q1/00***	***Q2/00***	***Q3/00***	***Q4/00E***	***2000e***
All Brands	13,242,000	14,461,000	15,983,000	16,618,000		17,776,000	18,262,000	19,843,000	20,747,000	
Avg All Brands Subs	12,839,000	13,851,500	15,222,000	16,300,500		17,197,000	18,019,000	19,052,500	20,295,000	
Avg Aol Subs						15,858,000	16,846,000	18,046,000	19,027,000	
AOL NA	12,042,000	13,261,000	14,783,000	15,468,000		16,248,000	17,444,000	18,648,000	19,406,000	
% + pr yr	38.32%	35.73%	37.98%	37.66%		34.93%	31.54%	26.14%	25.46%	
% + pr quarter	7.2%	10.1%	11.5%	4.6%		5.0%	7.4%	6.9%	4.1%	
Avg Min/member	***47***	***48***	***55***	***52***		***55***	***57***	***64***	***58***	
Avg rev/mo	$20.5	$20.5	$20.7	$20.8	**$20.6**	$20.8	$20.7	$20.6	$19.9	**$20.5**
% + pr yr	17.9	17.7	10.3	2.5	**11.7**	1.5	0.8	–0.1	–6.0	**–0.5**
Aver subs	11,639,000	12,651,500	14,022,000	15,125,500	**13,359,500**	15,858,000	16,846,000	18,046,000	19,027,000	**17,444,250**
Churn						change to net aolWW adds				
net Mkt cost/sub	$110.6	$82.3	$71.4	$298.4	$139.1	$217.7	$135.2	$156.7	$297.4	
% + pr yr	–15.7	–9.6	–20.0	63.8	21.8	96.8	64.2	119.4	–0.3	
Incr Mkt cost/sub	8.5	28.9	28.1	189.7	AOL only	115.2	107.9	115.4	92.3	
Avg Oth Rev/Sub	12.32	14.31	15.69	20.23		22.07	25.94	30.87	32.01	
% chg yty	17.32%	21.44%	36.24%	77.91%		79.18%	81.32%	96.73%	58.21%	
vs % chg in Subs	–21.00%	–14.29%	–1.74%	40.25%		44.25%	49.78%	70.58%	32.75%	
Ads/Ec Rev	156.10	209.00	252.00	276.00		319.00	399.00	521.00	562.00	
Avg EC rev/Sub	12.16	15.09	16.55	16.93	**60.73**	18.55	22.14	27.35	27.69	**95.73**
Chy % yty	48.35%	63.99%	71.79%	84.35%	AOL only	52.57%	46.75%	65.18%	63.55%	57.62%

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AMERICA ONLINE										
Segment	***Q1/99***	***Q2/99***	***Q3/99***	***Q4/99***	***1999E***	***Q1/00***	***Q2/00***	***Q3/00***	***Q4/00E***	***2000e***
Gross Margin Analysis										
AOL Revs Historical	858.10	960.00	1089.00	1192.00	**4156.10**	1298.00	1457.00	1663.00	1746.27	**6164.27**
Netscape SW	100	140	109	128	**437**	122	117	126	135	**500**
Netcenter	32.3	48	55	47	**184.3**	47	47	47	47	**188**
Other acquisitions (spin)	4									
Total AOL Revs	994.40	1148.00	1253.00	1367.00	**4777.40**	1467.00	1621.00	1836.00	1928.27	**6852.27**
Restated Revs	999	1148	1253	1377	**4777**					
AOL Gm reported	312.65	370.00	448.00	477.57		540.35	652.70	752.83	820.65	
AOL Cogs reported	545.45	590.00	641.00			757.65	804.30	910.17	925.62	
AOL Cogs Est	547.73772	589.45	641.63	714.43		757.65	804.30	910.17	925.62	
AOL GM %	36.43%	38.54%	41.14%	38.54%		40.17%	43.40%	44.03%	45.76%	
Netscape SW cogs	10.00	14.00	10.90	12.80		12.20	11.70	12.60	13.50	
Netcenter Cogs	7	9.6	11	0		0	0	0	0	
Other Acq Cogs	18.26	26.95	25.47	13.77		14.00	14.00	14.00	14.00	
Restated Cogs	583.00	640.00	689.00	741.00						
Restated GM										
					GM EST	783.85	830.00	936.77	953.12	

And not in the sense of a metric, but in the sense that they're not appreciating what customer loyalty means in Amazon, or they're not appreciating where growth may or may not come from. That they're not appreciating the potential for gross margin expansion in a company.

'A great example is sales and fulfilment at Amazon, which cost about 16 per cent of revenues in the fourth quarter. People said, 'That's tremendously high. A lot of the industry is much lower.' They had been about 10 per cent the year before.

'The glass is either half full or half empty. Half empty says those are terribly high costs, higher than competitors, and bad; or you could look at it as half full, and as a tremendous opportunity for Amazon to leverage their infrastructure. If they could reduce their cost to, say, 6 per cent, that's 1,000 basis points of extra operating margin. So that's where I spend a lot of time to determine whether they can reduce fulfilment costs. If I see them progressing along those lines faster than I think people realize, we would probably call that a catalyst for buying the stock again.'

A big bonus is when Chung determines that not only has the mainstream investment community misconstrued an earnings forecast, but also it has failed to understand the financial end-game. The mismatch between his estimate and the public-market value can be most marked when they come to differing conclusions about the underlying business model. This valuation gap is best exemplified by Ariba and CommerceOne, two competitors in B2B e-commerce.

'In August 1999, Ariba's market capitalization was roughly twice that of CommerceOne, the market's rationale perhaps being that Ariba's larger revenues reflected larger market share. CommerceOne and Ariba traded at similar MCAP/sales multiples (roughly 25 times). Both address a gigantic market, but from subtly different starting points. CommerceOne's model is based on the development and growth of business-to-business internet exchanges built on its software and operated by CommerceOne or its partners, which include General Motors and British Telecom. If successful, the business will have a recurring, long-tailed revenue stream of subscriber and transaction-based fees from those internet exchanges.

'CommerceOne's model, however, also has the characteristic of less up-front revenue from software licences, in exchange for recurring revenue in the future, than the traditional enterprise software model. We concluded that the market undervalued the business model that CommerceOne had established, and consequently the stock. However, our research also concluded that Ariba was an early leader in the business-to-business internet category.'

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Over the following year both stocks roughly tripled, though they suffered along with the whole technology sector at the back end of 2000.

Average up, not down

All the high-quality analysis and insights into valuation can be undone unless individual holdings are managed with vigilance once in the portfolio. The prevailing attitude at Alger is illustrated by America Online:

'The style here is to add to winning positions, to stocks doing well. America Online was bought first in October 1995. It did well, and more was bought. The position was added to through early 1996.'

A long-term love affair is not on, or even online. Take America Online, which is as close as Alger comes to a keeper. Chung, who was pushing the share to start with, was alert to the need to sell when things showed signs of coming off-track.

'By April 1996 we were already concerned regarding its ability to keep up with demand, which resulted in a disconnect problem and customer churn.'

The initial purchase was sold for a double, just before news about difficulties caused the price to halve. While still loving the story, Alger re-entered in July 1997 only after becoming convinced that the company had sorted out its problems and was ready to resume its advance. Top slicing followed later by buying back has occurred at regular intervals since.

Amazon, another long-time favourite, and once upon a time a top-ten position all across the firm, went when Chung concluded the price was too rich at the end of 1999.

'We sold because we know the difference between what's going to make a good stock and what drives the stock, and what is a great company. I think it's a great company, but we knew that the stock had probably got ahead of itself.'

An excellent call, as events showed by late 2000, because the price has since plunged from around $100, when sold, to below $20. Chung acknowledges that it is all too easy to become enamoured of a business when dealing with technology stocks. Great ideas can be so seductive you never want to let go.

Great ideas can be so seductive you never want to let go.

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'I get tied to my stocks, for sure. Everybody gets tied to stocks that they love.'

For which reason, regular internal investment reviews can be a rough ride. These are known as Monday morning yell *fests*. A poor argument is soon picked apart. The danger of hanging on too long is one to which everyone is sensitive. The need to remain immune to the siren call of a sexy story led Fred Alger to put in place a structured process, with defined sell limits to force a full-fledged review of the case for disposal once a stock hit its original target. Chung believes that challenges from seasoned and successful professionals at the firm, notably David Alger the CEO and chief investment officer, and Ron Tartaro and Seilai Khoo, both senior portfolio managers, provide the extra element that can expose a flaw or confirm a conclusion.

'Analysts are required to set formal targets: price, or a P/E, or a revenue multiple. When any stock hits that target, or the upside is single-digit percentage, it is time for re-evaluation. The analyst has to justify a higher price. That's where you see the difference between someone defending a stock because they love it, or whether there really are reasons to continue to own it.'

Of course, not every investment does what it is supposed to do. Even with the most thorough analysis, some fail to live up to their promise. The selling discipline for those that underperform is equally hard-nosed. Fall short and its the fast track to an exit from Alger portfolios. Chung explains the mechanism, a sort of internal stop loss that triggers a reality check:

'The other reason, clearly, to sell is if a stock falls short of the model that we've built. Following Service Corporation, we saw them pay increasing prices to acquire companies, and that, along with a slowing death rate, suggested they would have trouble making our earnings estimates. Sometimes reasons to sell scream out. Sometimes they whisper that something isn't quite as good as the story that's being told.'

Service Corporation screamed. Fred Alger managers all sold for a triple, netting over $80 in July 1998, and were long gone before the story unravelled. As of October 2000, Service trades at around $3.

The next wave

Chung is confident that we ain't seen nothing yet. He expects technology to continue to drive change in a way that will be positive both for business and consumers. In a 1999 interview he identified three

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separate spaces of opportunity that are here to stay, and which he expects, even with the odd hiccup along the way, will grow fast for the foreseeable future.

1. Consumer e-commerce

'Business to consumer is still interesting, but in a different way. That market seems to be consolidating around clear leaders very rapidly. There are great companies among those leaders. I think you will do very well financially by investing in some of those.'

His favourites, at the time of writing, are Yahoo, Ebay and America Online, but he has Amazon on his watch list and sees the possibility for that company to be a big holding again at some point in the future, when its fundamentals improve.

'In the consumer sector there is a core group that has already established broad customer bases, operating scale and strong brands with which they will continue to lead and outdistance their competitors. Yahoo and Ebay, in particular, we believe are internet franchises. Are these stocks cheap? No. Are they likely to be on the high end of some of the yardsticks that we have discussed? Yes. Are they likely to have growth, new business opportunities and profitability that continue to redefine their markets? We think so.'

2. Business to Business

'We're seeing a variety of marketplaces form. Some are adjuncts to traditional ones, but others are more revolutionary.

'The key is to determine the strategic technology providers of infrastructure software, hardware and services to the Global 2000 corporations that enhance the efficiency of their business processes – everything from sales and support services to manufacturing and supply chain management – by use of the internet and related technologies.'

The two big competitors are both picking up blue chip clients, as Chung observes. 'Ariba has major customers like Cargill, Cisco and IBM implementing its software: CommerceOne has the auto exchange Covisint with GM, Ford and other auto manufacturers participating, as well as international customers like British Telecom; Oracle has announced major wins at Citigroup. In the initial formation, most activity is just to try to automate the purchasing process.'

Chung sees B2B going way beyond creating a marketplace for electronic transactions – evolving into a fully fledged information exchange, linking purchasers and suppliers through the length of the value-added chain.

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'Part of that is to allow searching for new suppliers, or for auctions, or to determine prices. But that's really just the first step. When you've done with the purchase, that's when the real work begins!

'Suppose it's a custom-printed circuit board. While that board is being produced, the supplier can make sure that it's going to be the right part. So there's collaboration over the internet regarding design and manufacture of components. Manufacturing entails secondary supply issues. That supplier who GM selected for boards is going to purchase raw materials and chips. Maybe that supplier is a design shop which outsources. Automation will allow both parties – GM and all its suppliers – to see where each one is in the process, to see availability of components and raw materials, to co-ordinate activities, and, ultimately, match production more closely with demand.

'Then there's physical delivery. What you really want to have is all information: when is the part available? What is the defect rate? Is it acceptable? How many parts are you going to be able to produce? Which assembly line needs it now? Is it Detroit or Mexico City?

'The exchange is where everyone meets. It is the Grand Central Station of information. But it's sad if the train leaves at lightning speed and hits a dirt road. A dirt road is when the electronic order that was processed and requisitioned on the internet goes to a supplier and then, instead of immediately going into the order inventory management and manufacturing system, it's printed out in manual form and has to be re-keyed.'

Converging on the same space from a different starting point is I2 Technologies, a logistics information software company which holds leadership position in supply chain management.

'When you look at many of the things businesses want to accomplish through exchanges, including improving relationships with suppliers, I2 has many of the solutions. It is by far and away the leader. Its products are particularly suitable for B2B on the internet, solving what we call multi-enterprise problems. Their software is optimized to analyze information generated by the different companies who form part of the supply chain – the manufacturer, the component suppliers, the trucking company – enabling an acceleration of collaboration between multiple parties across multiple organizations. I2 produces a platform for adding other services in a B2B environment while linking third parties. They recently added payment mechanisms and online credit evaluation. This is very different from the focus of traditional ERP systems which look within at one enterprise.'

Which dovetails perfectly with the seven Immutable Laws of Collaborative Logistics as promulgated by Dr C. John Langley at the

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University of Tennessee. Here is one nexus where new-economy behavioural and business models reinvigorate old-economy industries.

3. Infrastructure providers or enablers

'Infrastructure companies capitalize on the inherent growth of traffic on the internet; the increasing complexity of the types of activities and transactions that corporations and individuals are trying to accomplish on the internet; and, of course, the ever-increasing competition among emerging and established companies to gain customers, market share, or competitive advantage. In this area, we think Exodus Communications, Inktomi and Vignette are potential internet-era franchises.'

And, of course, the story does not stop there. The often overused picks-and-shovels analogy is entirely appropriate. Companies enabling infrastructure improvement should generate longer-term growth.

Companies enabling infrastructure improvement should generate longer-term growth.

'For all this to work well, you need good, fast networks, you need security and you need good hardware.'

The list of likely winners includes the usual suspects, with Cisco, Microsoft and Sun prominent, plus a few additional names that are not yet so well known, including BEA Software and Verisign. Exodus Communications, a leader in web hosting, is another market pioneer where Alger was early to the party and also early to the exit selling out in the summer of 2000. And there will be others which are only a gleam in a garage as of 2001 but, by 2006, could be immensely important. Equally, newcomers may emerge that appear to hold great promise but turn out to be no more than a passing fad. In an era where change rules, mistakes will be made with attendant costs. But the cost from not getting aboard will be greater.

'This is the first innings of a nine-innings revolution called the internet. As a result, we can be confident of only a few things. One, that three years from now, some reader will e-mail us, perhaps via a wireless, web-surfing, voice-transcoding, America Online wristwatch, that we were fools investing in one of the companies named above. It would surprise us if that were not the case. On the other hand, we would be even more surprised if many of these companies (and new ones yet un-IPOed) did not continue to evolve and continue to transform the US economy, and, indeed, the global economy, in dramatic

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fashion in the next decade. So, while it is difficult to predict any of the changes we may or may not see in the next ten years brought about by the internet, we think it is very clear that investing in change, and in the companies that we believe are leading that change now, is the right thing to do.'

You can count on Chung and his colleagues at Fred Alger to lead the charge in the investment community, to embrace change, analyze new ideas to death, and unearth at least some of tomorrow's stock market stars – and certainly enough to continue to rack-up superior returns for their shareholders.

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