Is It Always Smart to Buy More Technology?
(No, No, No, No)

We can obtain some very good benefits by using computing technology. But there are also bad examples where there is excessive spending with little or no benefit. During the US Tech Bubble period of 1995 – 2000, there was often crazy spending, and poor results. We can do better.

1. CFO's talk about Tech (Forbes, May 27, 2002)
   - Lots of crazy spending on tech, 1995 – 2000
   - Now the financial officers want real results from tech spending
   - The CFOs fall on the floor laughing at the idea of "soft returns"

   - The media gave mindless praise for innovation ("however worthless"), etc.
   - Idiotic sayings about the "New Economy"
   - Investors were entranced: "Pro-forma" earnings, Fine, "Bald-faced deception?" Pile it on, etc.
   - The mood in business has changed from mania to remorse, etc.
   - Please read the 1-page story.

3. The big tech bubble (fear and posing) (Forbes, Mar 25, 2002)
   - Ideas really got crazy.
   - She was correct, but they finally wore her down.
   - Silicon Valley was like cult thinking.

4. Models from Mars (Business Week, Sep 4, 2000)
   - A number of plans and models for doing business were really crazy during the hype, hype, tech-craze period.

5. Telecoms crisis: Too many debts; too few calls (Economist, July 20, 2002)

6. The US has had huge overspending in broadband in the past few years. Most of these articles are elsewhere.

Also see another bundle of papers (RJ0125):

Roy Jenne
July 2002
Is It Always Smart to Buy More Technology?  
(No, No, No, No)

Roy Jenne  
23 July 2002

CFOs TALK ABOUT TECH  
(Only buy tech if there is a very real return.)

- The company CFO's now have a lot of veto power over technology purchases.
- The CFO's want "hard returns" from technology...a way to reduce costs quickly.
- The CFO's just laugh at the idea of soft returns.

- CEO: The big boss of the corporation  
- CFO: Chief Financial Officer  
- CIO: Chief Information Officer

Anyway, there was so much loose capital around for technology purchases between 1995 and 2000 that it didn't much matter who spent it. CEOs, terrified of being "Amazoned"—in fact or in market cap—would run into the office of the CFO, COO and CIO and tell them to stop fussing around and give the kids what they needed.

Lots of crazy spending, 1995-2000

Hard Returns Only, Please: Give me results

And now the seasons have morphed yet again. Last week I flew to Cincinnati to moderate (on behalf of Broadwing and Cincinnati Bell) a panel of CFOs and to ferret out their role in technology purchases. Keep in mind these were big-league CFOs—Procter & Gamble, GE Aircraft Engines, Kroger and other Cincy heavyweights. These guys swing 36-inch tech-budget bats. So if your name happens to be Steve Ballmer, Larry Ellison, Carly Fiorina, Scott McNealy or Sam Palmisano, you'd better pay attention. Your customers are speaking. Here is what the CFOs said:

- Today's CFO, to the greatest extent since the mainframe era, wields veto power over corporate technology purchases. Over hardware, software, telecom—you name it. Over everything.
- CFOs help choose vendors—especially for software.
- Today, only quantifiable "hard returns" on technology investment cut ice with CFOs. You must convince the CFO that your tech gear will reduce costs quickly—very quickly.
- CFOs fall on the floor laughing at the idea of "soft returns," i.e., claims that your spiffy software or your total solution whatsoever can provably—proof being the key—create sales or retain customers. Say again? Tech boosts my top line? Righhhht!

Today's CFOs know plenty about technology—more, I would guess, than most CIOs know about finance. I'd also speculate that the CFOs' sudden interest in technology comes as sobering news, especially if your name happens to be Steve, Larry, Scott, Carly or Sam....
But don't write off American capitalism just yet

The American economy is the most creative and enterprising and productive system ever devised,” George Bush told a Wall Street audience this week, before moving on to acknowledge some recent embarrassments. He was right about this, of course. The anguish of some American commentators over the spate of corporate scandals and over what these reveal about the supposedly rotten core of American capitalism is about as exaggerated—and in many cases as downright phony—as the corresponding delight of their European counterparts. An intelligent response to the Enrons and WorldComs needs to begin by acknowledging the strengths of America’s basic model and the dangers of attempting to fix what is not broken. Equally, though, the scandals do show that repairs are needed if the most creative, enterprising and productive system ever devised is to realise its full potential.

A good deal of what went on in American (and European) boardrooms in the latter part of the 1990s is now coming to light, should be regarded as no great surprise. This is not the first time that the mania accompanying a speculative bubble-in this case, in shares in “new economy” businesses—has induced a willing suspension of disbelief in almost all quarters. It is true that bosses of companies such as Enron and WorldCom violated investors’ trust and brought ruin on their companies’ owners. It is right that, having been found out, they should be punished, not excused. But everybody should at least bear in mind that these benders and breakers of the law had lots of help—not just from the auditing profession, which stands alongside them in the dock, but from many of the same people now crying out for retribution.

Hucksters turned preachers Mood in bubble

If you think back to the mood, pre-bust, you will recall that every kind of analyst (with a mere handful of noble exceptions) was cheering the market on, creating an atmosphere in which anything less than double-digit growth in profits was regarded as a sign of timidity. The media stoked the fires of impossible expectations with an unfailing supply of corporate hero-worship; with their mindless praise for innovation (however worthless); with news for day traders, new-economy-stock-market indices and the rest; with their idiotic dedication to the maxim that you either get it or don’t get it. At critical moments even the Federal Reserve added fuel. And investors themselves were so entranced by their surging wealth that they more or less willed companies to lie to them. “Pro forma” earnings? Fine. Bald-faced deception? File it on. Whatever it takes to keep the good news coming.

Back then the proposal to “expense” stock options (that is, to charge their cost against profits), an idea now widely supported as a good way to make accounts truer, was attacked from all sides—by Democrats as well as Republicans, by many of the same pundits who are now crying out for wholesale regulation of corporate decision-making, and by most new-economy investors themselves. Why? Because this change would have been something of a nuisance for the new miracle companies on which America’s future was said to depend. That trumped all counter-arguments.

In truth, the most effective remedy for these ethical and mental breakdowns has already been dispensed, frustrating as this is for politicians with careers to make. Shares may still be dear, but the technology-stock bubble has well and truly burst. The mood has changed from mania to remorse. Until further notice, regulation or no regulation, investors will be on their guard, and financial orthodoxy and corporate probity will once again be celebrated and valued.

It is in the nature of capitalism to make progress in fits and starts. To some degree, lurching cycles of sentiment are part of the process—the price paid for superior long-term performance. It would be unwise to expect them ever to be eliminated, and rash to try. Still, this boom-and-bust cycle has revealed weaknesses in corporate governance and supervision that can and should be remedied. A few things are broken, and should be fixed. These tweaks would not make American capitalism less American: they would make it truer to its own principles. If they can be done, it will work even better.

A curse on interesting accountants

So far as outright fraud is concerned, the laws are there already. As Mr Bush said this week, they need to be more vigorously enforced; a few exemplary jail sentences would be welcome. But that aside, the most important remediable failures of corporate America fall into three overlapping categories: audit, independent directors and bosses’ pay. In all three, the need is not to dictate to companies, but to help shareholders do a better job of protecting their own interests, should they be in the mood to try.

Auditing is dull—or damned well ought to be. Shareholders are helpless if they cannot rely on the unvarnished accuracy of the numbers their managers show them. The desire of the accounting profession to express flair and originality must be quashed, and the conflict of interest that arises when managers in effect appoint and pay their own auditors must be resolved. The elements of a minimum reform ought to be: prohibition of non-audit work for audit clients; mandatory rotation of auditors; and the creation of an official oversight body. The Senate audit-reform bill sponsored by Paul Sarbanes is stronger than the House of Representatives’ plan, but even it falls short. The White House, ever prone to confuse what is good for chief executives with what is good for the economy, regards the Sarbanes bill as too tough (see pages 22-24).

On independent directors, what the president said this week was better. He called on stock exchanges to require companies to appoint a majority of independent (non-executive) directors, and for audit and remuneration committees to be all independent. However, here too Mr Bush should have gone further. Independent directors on main boards ought to be required to meet regularly without executive directors present: otherwise, they will find themselves too easily led by the chief executive and his acolytes. Their job is not to nod in approval.
FEAR AND POSING
WHEN NO ONE ADMITS IGNORANCE—LOOK OUT

By Carleen Hawn

What rational person could look at sketchy crosshatches on a whiteboard, ease back in his leather boardroom swivel chair, and cautiously reason that selling anything, especially kitty litter, over a 56K modem,

and at a loss, might define a new economy? Not a person, it seems at first, who was possessed of the slightest bit of self-doubt. Unless, perhaps, there were 15 other people in the room telling him that it was so. And yet the only truth, as it turns out, was that he didn’t have the courage to argue. This is a scenario as likely as any, along with farcical business models, shoddy equity research, and a deliberate disregard of practical accounting, that led very sophisticated investors to place their money behind gizmos, strategies, and math that they did not understand.

They feared shame—specifically the kind of shame that comes from being perceived as dumb, uncool, or generally not “getting it,” all of which foster scorn. Some psychologists refer to this phenomenon as the “Imposter Syndrome.”

She was correct. The rest that she was crazy.

Time and again, as business plans predicated on amassing eyeballs over loyal customers passed over her desk, Turezyn balked. “I kept saying, ‘There is going to be a shitload of money lost on the Internet.’ All these VCs who thought they were geniuses looked at me like I was a dinosaur. They said, ‘Yeah, but in the interim there is going to be a lot of money made.’”

Ideas got really crazy. People paid huge money anyway.

They finally wore her down.

Between 1995 and 2001 the wildebeest-like migration of egos away from three little words—“I don’t know”—fueled what might be described as a Moore’s Law for dumbness: The crazier the ideas got, and the dumber we felt, the more quickly we acquiesced to them. This empirical scorn-avoidance—what psychologists call “groupthink”—contributed to a $3 trillion shell economy.

$3 trillion shell economy

Forbes Mar 25, 2002
Steve said: Maybe you should have a sensible business plan. They said he was crazy.

"I went to those meetings and started saying things like 'Maybe you should spend that $10 million you just raised on acquiring a customer base rather than building a brand.' The CEO, a really smart woman, told me, 'Steve, you just don't get it—all the rules have changed.'"

It seduced other marquee investors from firms such as Kleiner Perkins Caufield & Byers, Benchmark Capital, and Merrill Lynch. Blank figures he's lost money on all but one of his deals from 2000.

Silicon Valley was like a cult thinking.

"There is so much pressure in the Valley to do the next big thing that there is a natural disposition to find that thing that you are working on to be it," says Subrah Iyar, founder and chief executive of WebEx, a Web-conferencing provider. "Working at a company in Silicon Valley is like being in a cult. Nobody wants to be the unbeliever in the room. You learn fast that you can't raise objections. Critics just get left out of meetings."

In Silicon Valley, where IQs are lofty and résumés thick with M.B.A.s and engineering degrees, there is ample opportunity to feel inadequate. Here creativity and brainpower are placed at such a premium that reason is often synonymous to genius. But sometimes the desire to "think outside the box" leads investors and entrepreneurs to endorse things that they know won't work.

Gough was responsible for presenting Quokka's programming strategy for the games. "I had a vision. I'd brainstormed for about two weeks. It was very, very abstract. NBC's presentation was very specific. They'd been working on it for two years. They had interviews, time slots, everything mapped out," he recalls. "They looked at me like they knew what we were doing. This was supposed to be us 'taking them by storm.' I felt like a poser."

Never mind. Ebersol bought the Quokka "vision," and the two companies eventually broadcast the games together in August 2000. A year later Quokka was bankrupt, forfeiting, among its assets, the rights to Webcast future Olympic Games.

Naked Arrogance
By Donna Dubinsky
Arrogance played a big role in screwing things up last year. We need a "Most Arrogant" list: companies that felt they could do anything—disobey the law, grow without cost, disregard sound business principles. Then there are the Wall Street analysts who threw out their conventional models to hype the new world, the venture capitalists who funded companies without clear product or business plans, and even individual investors, who believed they could spot the winners and the losers.

I've certainly had my own brushes with arrogance. When we started Handspring fresh off our success at Palm, we felt invincible. We created a great new product, but we failed to create a great distribution channel. We planned to sell over a Web site that simply wasn't ready, and so we made a mess of our first few months of shipments.

In some ways I'm glad for this early near-disaster in our company's history. It quickly taught us that we were not in the least invincible. Perhaps the only way to inoculate a company against arrogance is experiencing a setback that sticks in the collective memory.

Perhaps we can rename 2001 the Year of Arrogance Revealed.

Donna Dubinsky is cofounder, president, and CEO of Handspring.

The Tech Effect
By Gordon Moore
My view of the depths of the cycles the industry has gone through is that no two are alike. But you are in danger of getting into the old problem of always blaming the generals for preparing to fight the last war. I would encourage the broader look at the market—now and down the road. This whole information technology used to be a small part of the economy. Now it is such a major portion... I used to end some of my talks with a plot of the growth of the semiconductor industry, and the growth of the gross national product. The curves cross in something like 2020, suggesting that by then the entire economy would be semiconductors. Obviously ridiculous. You can't just grow blindly, thinking you are going to become 10% or 20% of everything people are spending. Technology is a major part of modern society. But because it is, it has to be viewed with the rest of the economy around it. It can't be looked at in isolation anymore.

Gordon Moore, the cofounder of Intel, calculated 37 years ago that it would be possible to produce a faster, smaller, cheaper chip every year, a prediction that came to be known as Moore's Law.
Welcome, class of 2020. Today our virtual MBA lesson is on what we now refer to as the annual horribilis of the e-commerce Age. True, the year 2000 was marked by many notable headlines, among them the revelation that the cast of Survivor really stayed at the Fiji Hilton and not on that island. But today we will talk about the year that marked the nadir of the dot-com demise. In 2000, e-commerce companies tanked in the stock market, the companies couldn't get desperately needed additional financing, newspaper headlines screamed layoff after layoff, and many of the companies eventually went bust.

According to a survey by Webmergers Inc., in the first seven months of that year, of 238 dot-com startups, 41 collapsed, 29 were sold in fire sales, and 83 withdrew their plans for initial public offerings.

The problem was that the business models stank—i.e., the companies just couldn't make money. Amazon.com Inc., the poster child of the New Economy, ran up losses totaling $1.5 billion from its inception in 1994 to July of that year, and its stock fell some 70% off its all-time high. “Venture capitalists and investment bankers were the first to dream up these business models. They were great at hyping stocks, but miserable when it came to delivering the goods,” said David Tiscoll, co-author of a best-selling business book in 2000 called Digital Capital: Harnessing the Power of Business Webs.

Let's review some of the great flawed business models of that period:

**Modulus Obscurus** (The B or Not 2B Model): Sometimes called the 222222 model or the “Whatever” model, this was designed to morph through various configurations until whoever was in charge got it right. Adopted by companies such as mortgage.com, which, after losing $11 million on revenue of $11 million in the second quarter of 2000, decided it would focus on building an online mortgage infrastructure for other lenders rather than providing mortgage services to consumers. Another one, AskJeeves.com, the consumer search-service tool that was not reaping its targeted share of advertising revenues, decided midstream to push its software as a corporate search tool. Mortgage.com's stock dropped as much as 94% off its all-time high; Ask Jeeves Inc. was down 92%. Some of these companies succeeded, others continued morphing into other letters of the alphabet.

**Modulus Malcontentus** (The Mal-Content Provider)
At the height of the *annus horribilis* 2000, the flawed logic behind the business models seemed of little consequence to the venture capitalists and investment bankers. They simply loaded up on cheap stock and excitedly awaited the company's IPO. When the stock rocketed and the lockup period ended, most of them quickly cashed out, looking for the next cash cow. Spurring all this on were dot-com cheerleaders at brokerages and investment banks. As they enthusiastically cartwheeled from business model to business model, they assisted in drumming up short-lived exuberance for each among investors. “Buyer aggregators,” “surf-and-turf,” and “metamedia” were treated like flavors of the month. E-commerce sector plays were mercantilist, too. B2C (business-to-commerce) was in one day, B2B (business-to-business) the next. There was even B2G (business-to-government) and B2E (business-to-employee), then B2B2B—for companies that decided they needed to swing the other way, or maybe both ways.

But what about the P2P Model—the path to profitability? Few dot-coms adopted that one. In hindsight, it’s clear that it cost too much for those companies to acquire customers. It’s not that folks didn’t want to buy online—in 2000, customers spent some $40 billion online, and that continued to increase. The biggest problem was that most e-businesses were entering crowded fields. “Many seemed to have hid in basements and concocted business plans, totally unaware that six other teams were building the exact same model,” said Michael May, a digital commerce analyst at Jupiter Communications. The Internet made competition worse because customer retention was elusive. Jupiter reported that 76% of customers visited two or more sites, comparing prices before making a purchase. Consider Internet department store more.com. It spent an eye-popping $10.05 on marketing and ad costs to reap only $1.45 in revenue per visitor in 1999. Also, profit margins at most of these companies were just too low.

In an about-face, brick-and-mortar companies such as Wal-Mart Stores Inc. and Gap Inc. started beating e-commerce companies at their own game. With multiple channels—stores, catalogs, and the Net—they produced three times the annual sales volume per customer of a single online site. “We’re seeing traditional brick-and-mortar players gaining more and more online revenues because they’ve got existing infrastructure,” said Carl Lenz, director of research at Gartner Group Inc.

As we now know, the biggest winners in online commerce were brick-and-mortar companies like eBay Inc. that created entirely new commercial transactions via the Internet—ones that would be difficult or impossible in the offline world. “It all comes down to the fact that the Web is essentially an information medium,” said Kevin Murphy, an analyst at the Gartner Group.

Today, we don’t even use the term “Internet business model” unless it’s meant as slang, referring to something that is inherently faulty or quickly outdated (Modulus Outmodelus).
Too many debts; too few calls

The telecoms industry is in a mess. What went wrong, and how can it be fixed?

The bigger they are, the harder they fall. And in recent times nothing has got much bigger, or fallen much harder, than the telecoms industry. WorldCom, a discredited industry giant embroiled in an accounting scandal, teeters on the verge of bankruptcy. Its collapse, were it to happen, would be the biggest in corporate history. But it would also be only the latest in a line of telecoms firms to have gone under.

WorldCom is currently subject to a criminal investigation, as is Qwest, another American telecoms giant. But telecoms firms untainted by scandal are also struggling to service their huge debts. Banks' global exposure to the industry is estimated at $1 trillion, according to Ovum, a consultancy. Some analysts reckon that as much as half of that may yet have to be written off.

Telecoms share prices have plunged and chief executives are being steadily booted out. This week it was the turn of Ron Sommer, the boss of Deutsche Telekom, who was forced to resign on July 16th. But the job losses extend far beyond the boardroom. Telecoms operators and equipment vendors have laid off nearly 500,000 people in America alone since the beginning of last year, according to figures from Challenger, Gray & Christmas, a firm of headhunters.

The dotcom crash, it turns out, was merely the warm-up. The telecoms crash is many times bigger. Michael Powell, chairman of America's Federal Communications Commission (fcc), surprised nobody when he declared this week that the industry is facing "utter crisis". The situation is being likened to the Dark Ages. The old empires have fallen and a prolonged period of uncertainty looms. How did telecoms companies get into such a hole, and how can they climb out of it?

Fallacious foundations

Now that the crash has happened, there is no shortage of theories to explain it. The simple one is that too many firms got caught up in Internet mania, assumed astronomical rates of traffic growth and, erged on by bullish investors, started building networks to carry that traffic. The trouble is, this construction boom was founded on a number of fallacies.

The first, says Allan Tumolillo, an analyst at Probe Research and a long-time telecoms sceptic, was the old saw of "build it and they will come". Alas, they did build it—but they did not come. Since 1997, Internet traffic has roughly doubled every year. But much of the industry was betting on it doubling every 100 days (see box on next page). This mythical growth rate was then expected to apply to all forms of telecoms traffic. And what better way to prepare for the coming deluge than to lay vast amounts of fibre-optic cable?

This was a big mistake. Between 1998 and 2001, says Andrew Odlyzko, a researcher at the University of Minnesota, the amount of fibre in the ground increased fivefold. Meanwhile, advances in the technology of feeding signals into fibres at one end and extracting them at the other increased the transmission capacity of each strand of fibre 100-fold. So total transmission capacity increased 1000-fold. But over the same period, demand merely quadrupled. To be fair, when digging up the ground and laying fibre, it makes sense to lay far more than is currently needed. If you are laying 24 strands, you may as well lay 240. The problem was not that individual firms laid too much fibre, but that there were so many firms building almost identical networks. In the United States, more than a dozen national fibre backbones were constructed; a similar duplication happened in Western Europe.

The second destructive fallacy, says Mr Tumolillo, was the almost ritual invocation of Metcalfe's Law, a finding from computer science which states that the number of possible cross-connections (and hence the usefulness of a network) is proportional to the square of the number of nodes or users. This was used to justify the building of enormous pan-European or global networks, on the basis that bigger is exponentially better. But the real world is more complicated than computer science, notes Mr Tumolillo. When two American telecoms firms, SBC and Ameritech, merged in 1999, the combined firms' network became larger, but the value of the merged firm still fell.

A third myth is the notion of "Internet time", which Mr Odlyzko defines as "the perception that product development and consumer acceptance were now occurring in a fraction of the traditional time." He does not dispute that the Internet is a significant advance in communications technology, and he admits that 100% annual growth in traffic is not to be sniffed at. But, he says, new technologies take many years to diffuse, and the Internet is no exception. Telecoms firms, however, were betting on an overnight transformation that would translate into a sudden leap in demand.

As upstart firms splurged on vast infrastructure investments, the incumbents followed suit. The former national monopolies in Europe, AT&T in America and NTT in Japan all tried to transform themselves into global operators. They built new networks and bought stakes in foreign operators. European companies gambled that the supposed surge in demand for fixed communications capacity would be followed by a similar leap in demand for mobile capacity, and they paid over €100 billion ($90 billion) for licences to run "third-generation" (3G) mobile networks. In the process, they ran up huge debts.

When it became clear that the industry had bet on an increase in demand that was not likely to materialise in the near future, ferocious competition and frantic price-cutting ensued. Equipment vendors' sales dried up. And some firms resorted to fiddling to conceal the lack of revenue.

After the party

The industry's hangover has two components: overcapacity and debt. If it is to recover, it must tackle these two closely intertwined problems. When an operator goes bankrupt, its capacity does not go away. Instead, the new owner (or the original owner, operating under bankruptcy protection) can run the network far more cheaply, having been freed from much of the need to service the debts incurred in building it. The result is a domino effect: prices fall. driving

etc