

Digital déj@ vu

Haven't we seen all this before?

History is composed of lessons from which successive generations are expected to learn. SCOTT DONALD ponders the extent to which our collective behaviour in the current Internet investment boom is influenced by past experience.



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In the past decade the Internet has become a daily reality for more than 70 million people.¹ In the past two decades personal computing power has intensified over 200 times.² And just as each succeeding generation experiences adolescence afresh, we, the recipients of this change, see it as unprecedented and as offering infinite possibilities and hitherto unimagined challenge.

If history teaches us anything, it is that genuine technological progress occurs in unpredictable bursts, and that the winners and losers are not obvious until the dust settles. We also know that markets vacillate between fear and greed. The result is a roller-coaster ride for investors whenever major technological advances occur.

At a superficial level, the current Internet phenomenon has this flavour, too. However as commentators are increasingly pointing out, history has some deeper lessons for those who care to look. The parallels to the 1840s, when life and commerce were revolutionised by first the railroad and then the telegraph, are too startling to ignore: the question is, which of the lessons will prove relevant this time around? Will investors suffer the fate of the railroad stockholders in 1846 who saw the value of their stocks fall by 85% in a matter of months, or will the Internet be rendered obsolete by the rapid arrival of another, more useful technology, as was the case with the telegraph?

In this information-rich age, investors are continually reminded of the opportunities.

But the longer the stockmarket rewards investors, the more those in the market wonder about whether it is too soon to sell, and those out of the market wonder about whether it is too late to buy. Even the professional investment managers are struggling with the challenges posed by the Internet. After all is said and done, investors must remember that all forms of technology — especially the revolutionary sort — are transient under the forces of time. Today's marvels are too often tomorrow's fossils. Amid all of our wide-eyed wonder at the Internet, investors are well-advised to hold fast to a diversified portfolio and shake off the hype in favor of the sober, long-term perspective that history offers us.

STEEL HORSE STAMPEDE

The early decades of the 1800s saw enormous technological innovation, particularly in the UK. Street lighting, machine printing presses, miners' lamps and sewing machines all date from that period. However two areas of knowledge, steam engines and steel-making, came together in the late 1820s in a piece of technology that transformed human existence — the railroad.

How can we understand the impact of this change, when today suburban travel at anything less than 60 kilometres an hour inspires road rage? Contemporaries talked about the "annihilation of space by time"³ and, more colourfully, by the notion that the railways caused the population to "advance *en masse*, and place their chairs nearer to the fireside of their metropolis".⁴

Not only did the railway make travel three times faster, it was cheaper and stimulated regional trade. In England the main benefit was in the delivery of perishable goods, including food, to new, more distant markets. In North America, the benefit was mostly felt in the movement of goods that were either too heavy or bulky to be moved economically by road. This reduced the severity of regional cycles and, because of the reliability of rail transport compared

with road or river, permitted the more efficient use of productive capacity.

Impelled by the economic benefits that could be expected of such traffic, companies sprang up in every metropolis. One hundred miles of track in the UK in 1843 became 800 in 1844, 3,000 in 1845 and 4,500 in 1846, incredible growth in a newly industrialising economy. The story in the US was the same: 3,000 miles in 1840 became 9,000 by 1850 and 30,000 by 1860. Even more incredible, many of the later railroads were designed to join remote locations with little potential traffic.

Surprisingly, attracting capital to such enterprise was not difficult. In most cases a deposit of 5% was all that investors required. As a result, the 1840s boom in the UK attracted £700 million, roughly 10 times the total annual imports for the country at that time. In the US, where the boom was a few years later in coming, railroads accounted for \$800 million of the \$1,500 million worth of securities outstanding in 1856.⁵

But few of the investors earned the fabulous returns that accrued to a few entrepreneurs. Construction costs almost always overran estimates as suppliers and landowners increased their prices in the face of increased demand caused by the railways. Competition in an industry where physical factors caused natural monopolies repeatedly made older, smaller railroads obsolete.

Masking this, actual profitability is hard to measure because of the smoke and mirrors permitted by accounting practices at the time. Recent estimates suggest average returns over the period ranged from 5% to 8% per annum in both the UK and the US.⁶ But even reputable railroads were caught up in the panics of 1846 (UK) and 1857 (US), and many ended in bankruptcy. By 1850 railway shares in the UK had declined 85% from their peak, and the total value of all railway shares was less than half the total capital expended on them.⁷

Other beneficiaries emerged, though. Economists trying to measure the value of the railways to the economy as a whole find that the broader economic benefits of the railway accrued from the outset. Importantly, one of the main sources of this benefit (roughly 40%) came not from a

measured change in output volume or price, but from the implied benefit of product quality, namely the massive increase in the comfort of personal travel brought about by the railways.

THE FUTURE CALLING

If the railroads permitted people to travel three times faster, another technological development of the 1840s — the telegraph — permitted their thoughts to travel more than thirty million times faster. Indeed, this technological breakthrough made intercontinental communication almost instantaneous. A London importer sending a message to his agent in Bombay previously would wait 10 weeks for a response; in 1840 the advent of the telegraph compressed the same communication process to just four minutes.

Such a change immediately reshaped the contours of competition in business. Contact with customers that had taken place perhaps semi-annually became weekly, or even daily. Price and speed of delivery, rather than availability, became the key to competitive advantage in markets, since collecting quotes from alternative vendors was quick and cheap. Inventory levels could be slashed and middlemen “arrangers” could be bypassed.

Not surprisingly, therefore, business was quick to recognise the value of this new technology. In New York in the 1850s, messages related to stock exchange business accounted for approximately 50% of traffic and other commercial users approximately 30%. And, once started, the growth of the network — just as with the railroad — was exponential. Forty miles in the US in 1846 became 1,200 in 1850, 23,000 in 1852 and 650,000 in 1874. The pan-Continental link was achieved in 1862. By 1866 a working trans-Atlantic cable had been established. India, Hong Kong, China and Japan were linked in 1870, and Australia joined them in 1871.

Some of the corporate beneficiaries, companies like Western Union, were directly involved in the telegraphy business. Some, such as the Gutta Percha Company (now known by the more prosaic name Cable and Wireless) which produced insulated coating for the telegraph wires, benefited from the construction and

maintenance of the lines, rather than the transmissions themselves. More important, though, were the companies that were able to cut their costs and develop new products — companies such as Reuters in Germany, which replaced its flock of carrier pigeons with a smaller flock of telegraph operators and foreign correspondents to bring more news, faster, to the cities of Europe.

Pundits of the time confidently expected the telegraph to lead the world into a new age of prosperity. And yet within a few years the fences of containment were already being erected. In 1876 Alexander Graham Bell registered his patent, titled “Improvements in Telegraphy”, and the telephone was born. By 1886 more than 250,000 telephones were in use across the US and the telegraph’s use was entirely short-circuited.

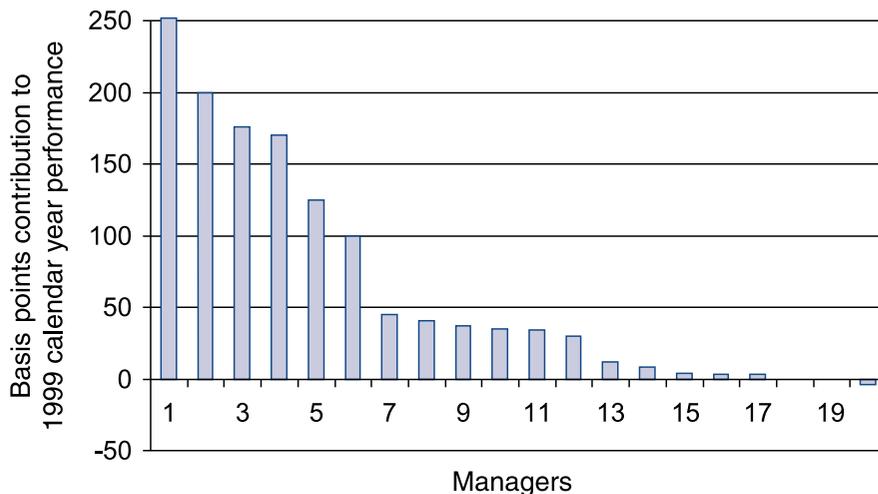
THE NEW E-ECONOMY

Today’s popular press finds no shortage of hyperbole in its dealings with the Web. Magazines such as *Forbes* and *BRW* trumpet the arrival of a new elite; the dot.com billionaires in the “triple comma club”.⁸ Economists proudly proclaim a “New Golden Age” in much the same way as journalists in the 1840s enthused with evangelistic zeal about the role of the railroads in bringing about the “arrival of a time when the world will have become one great family.”⁹

Like its forebears, the railroad and telegraph, there are considerable economic benefits in prospect from applying the technology.¹⁰ That these will accrue across all sectors of the economy, though to differing extents, is clear enough. That the early growth in the size of the network has been explosive should also not have been surprising, given the experiences of the 1840s and 1850s. But will the Internet phenomenon follow the example of the railroads, where the speculative bubble burst, bringing financial strife to the investment community? Or will it, like the telegraph, soon be made obsolete by another, more widely useful technology that lurks unseen around the corner?

These are big questions — perhaps too big. Nevertheless, investors would be wise to heed the lessons of history: while a few are made fabulously wealthy by leaps in technology like

FIGURE 1 The IPO effect



the Internet, latecomers are typically better off looking to the second-round beneficiaries than trying to jump on the bandwagon.

Companies that serve the genuine needs of the population will have to come to terms with the implications of the new technology for their businesses. These more traditional companies, which still represent the largest part of most developed sharemarkets, are a safer and more familiar hunting ground for most investors. The gains made by these companies may not be earmarked as Internet-related once the Internet hype dies down but the impact will be significant nonetheless.

MANAGER CHALLENGES

As challenging as the Internet is for private investors, professional investment managers also face a multi-faceted test. Four distinct aspects are discernible.

- **The IPO feeding frenzy.** Sixty-four technology floats were brought to the Australian market in 1999, which of itself implies a heavy workload just to keep up with the offerings. This was compounded because the average appreciation from launch date to the end of the year was 38%, well in advance of the 5% earned by the market benchmark, the All-Ordinaries index, on a similar basis.¹¹ So it was dangerous to ignore the floats completely.

The key for investment managers was to get access to the floats they liked in sufficient volume to have a material

impact on portfolios. A few managers chose to buy every IPO they were offered, but most found themselves dependent once again on their relationship with the broking community, and not just the majors. For managers with a large-cap bias, or with poor relations with key broking analysts, this proved to be a competitive issue.

The impact of IPOs on 1999 calendar-year performance appears to have varied dramatically across the investment management community. A simple survey of around 20 investment managers found three quite distinct groupings: a group which earned very little excess returns from technology IPOs (less than 10 basis points) over the year, another which earned approximately 30-40 basis points and a third group which earned more than 150 basis points over the year. Even allowing for some inaccuracy in the measurement of the IPO effect, these findings suggest that the distribution of the IPO effect has been uneven.

- **Struggles with conventional valuation techniques.** Much has been made of the fact that many Internet and IT companies are floated before they have positive earnings. Further, the value of the intellectual capital (or in some cases the brand) embodied in the company can be difficult to quantify. Together these characteristics make Internet stocks difficult to value for many investment

managers, particularly those relying on cashflow measures, dividend discount models, or simple measures of value such as P/E, P/B and P/NTA. These managers may be forced to make "exceptions" for Internet stocks, which tends to limit the allocations that they are prepared to make.

It also takes those stocks they do buy for portfolios outside their normal decision process, which then causes problems for the sell decision. Some have even taken to using new measures of value, such as price/revenue, to justify their investment in these companies. In the US, the home of the Internet IPOs, some well-respected managers have even given up valuing the stocks altogether, resorting to chasing price momentum rather than trying to justify impossible financial ratios.

- **Traditional companies face new realities.**

As with the railway and telegraph, the Internet is challenging many traditional businesses to consider their future. Banks, media companies, retailers, even manufacturers have been forced to consider the implications.¹² And by implication, therefore, so have the investment managers analysing these companies. Given the size of these sectors in the Australian stockmarket, this could potentially have as great an impact on manager performance as the nascent IT sector, given that with a few exceptions, Internet stocks are too small to be represented on the All-Ords.

This is not to say that you will need to be a fresh-faced techno-geek to be a stock analyst in the coming e-economy. Those analysts who know the drivers of profitability for their companies, and understand the competitive environment faced by those companies, will prevail. However, that will require an understanding of the technology employed in the business; Luddites will be left behind.

- **New information pipeline alters research practices.**

The Internet dramatically reduces the cost of certain types of research, one of the traditional barriers to entry to institutional equity investment management. This plays into the hands of smaller investment firms and would-be boutiques. Analysts can now collect an

unprecedented amount of detailed stock information automatically, via secure electronic link, at low cost.

Almost all investment firms now have databases that communicate directly with broker databases for material such as financial information and forward earnings estimates. Research reports are exchanged by e-mail. Analysts are now challenged to process the information efficiently, and to draw insight from the data, rather than to discover new information.

Coming to grips with the financial dynamics of Internet companies is itself requiring the application of new technologies. Analysts in the US, for instance, now use monitoring technology to measure the number of references to a stock by Internet chatrooms. A sudden flood of references may presage the next sure thing!

TRASH OR TREASURE

Few technologies have the power to revolutionise economies. But economists from Adam Smith onward have recognised the important role that technology plays in harnessing the productive capacity of man and beast. And all agree that paradigm-changing technology creates new wealth across the economy, along the way promoting new winners and consigning others to the trash-heap of history.

There are few today who doubt that the Internet — and the personal computing technology that makes it accessible to a large portion of the community — has changed the way companies will compete and how individuals will live. Companies in most industries face new sales channels, faster production cycles and lower barriers to entry. The individual as consumer has new alternatives, and as a worker in a hyper-connected world, new challenges. How this all pans out will no doubt be clear to future generations who will have the benefit of hindsight.

As contemporary participants in the Internet era, the winners and losers are not so clear. Even forward-looking companies from other sectors are only now positioning themselves to fully exploit Internet know-how. So the secondary beneficiaries of the technological revolution are yet to emerge. This means

that a well-diversified portfolio is now the most reliable and level-headed way to exploit the opportunity afforded by the Internet. Rather than charging off in pursuit of a distinct Internet investment play, smart investors will keep their total portfolios — Internet stocks and all — steadfastly aligned with their long-term goals.

Equally, it is impossible to know whether now is too late to buy, or too early to sell. This is not the “sexy” story many want to hear. However, the hype that surrounds the current market environment in many cases masks the fact that even professional investment firms are struggling to exploit the Internet revolution. The investment firms face challenges to their valuation techniques, to their understanding of how businesses and industries operate, and to the whole way they conduct their research.

Some of the changes will prove ephemeral, but some things will change forever. For investors, trying to judge investment managers from a distance, and identifying which investment managers are abreast of the changes, is virtually impossible. Only an intensive, broad-based research effort can shed useful light on this difficult question.

NOTES

- 1 As at 21 January 2000, *www.Netsizer.com*
- 2 Based on Commodore 64 @ 4MHz versus new desktops @ 800MHz.
- 3 Karl Marx, quoted in Schivelbusch (1987).
- 4 Schivelbusch (1987).
- 5 Sobel (1973).
- 6 Fishlow (1965) and Sobel (1973) for the US, and Hawke (1970) for the UK.
- 7 Chancellor (1999).
- 8 Around 80 of this year's *Forbes* 400 richest Americans can attribute their inclusion to the IT/Internet/telecommunications juggernaut.
- 9 Chancellor (1999).
- 10 If not, then the Internet has no customers and perhaps a speculative

mania with no underlying economic rationale, such as the Dutch tulipmania of 1630s, is a more appropriate comparison than either the railroads or the telegraph.

11 ie, the average appreciation of the All-Ordinaries accumulation index between the date of each float and 31 December 1999.

12 In a recent study, *Barron's* reported that 19 out of 30 companies included in the Dow Jones Industrial Average (US) had crafted “comprehensive Internet strategies”, five had “questionable strategies” and six demonstrated no evidence of a “coherent Net strategy” (20 December 1999).

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