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The Rise and Fall of the dot com Entrepreneurs

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Abstract:

This paper looks at the dot com phenomenon drawing mainly on examples from the USA where the boom started and was most pronounced, but also from the UK which had a number of high profile dot coms. It starts by asking the question, 'Who were the dot coms?'. it then goes on to consider the factors which led to the emergence of the dot coms such as the emergence of the commercial Internet, the lowering of entry barriers which followed from this and the funding available for new businesses through venture capital.

The article also looks at the reasons why it was believed that the dot coms represented a threat to established businesses. The article then looks at the booming IPO market for dot coms and the opportunities this provided for exit by venture capital investors.

The crash of 2000 is considered, lessons are drawn for entrepreneurs and investors and finally the article will look at future prospects for the dot com sector.

Keywords: dot coms, venture capital, e-commerce

1. Introduction and objectives

On 7th December 1998 the front cover of Fortune announced: 'Internet or bust'. This hyperbolic statement was made at the height of the dot com boom. Traditional companies felt vulnerable, as many observers believed that the start-up companies – the so-called dot coms – would threaten established ways of doing business. However, just a year and a half later the dot com bubble had burst.

This paper looks at the dot com phenomenon drawing mainly on examples from the USA where the boom started and was most pronounced, but also from the UK which had a number of high profile dot coms. It will consider the following points:

In section 2 this paper will ask the question 'Who were the dot coms?'. Section 3 will go on to consider the factors which led to the emergence of the dot coms such as the emergence of the commercial Internet, the lowering of entry barriers which followed from this and the funding available for new businesses through venture capital. Section 4 will look at the reasons why it was believed that the dot coms represented a threat to established businesses. Section 5 will analyse the nature of the dot com IPO frenzy of the late 1990s and the gains made by venture capital firms. Section 6 will explain the collapse in dot com share prices in 2000, drawing on academic theory and empirical data. Lessons that can be drawn for entrepreneurs and investors are covered in section 7, which looks at examples of success and failure in the dot com sector. Finally, in section 8 future prospects for the dot com sector will be examined.

2. Who were the dot coms?

In the USA in the mid to late 1990s a large number of new firms emerged through the medium of the Internet. These so-called dot coms included the high profile firms, Amazon, Yahoo and eBay. It is no coincidence that these companies emerged in a nation at the forefront of what Audretsch and Thurik (2001) identified as the newly emerging entrepreneurial economy.

The entrepreneurial economy is described in terms of a number of trade-offs with the previously dominant managed economy and is characterised by greater uncertainty, turbulence and 'an increased role for new and small enterprises' (Audretsch and Thurik, 2001, p270) which sets the scene for the growth of these companies.

Whilst the dot com phenomenon was most apparent in the USA, European entrepreneurs also emerged with such well publicised examples as Boo.com (a retailer of sports goods), and Lastminute.com (enabling customers to purchase unsold travel inventory).

But before one talks about dot coms in any depth it is necessary to be clear about what they are and how they vary in characteristics. Chaffey (2002, p54) defines dot coms as "businesses whose main trading presence is on the Internet", thus distinguishing them from established firms such as Lands' End – the catalogue retailer of clothes – which open an Internet channel; such firms being referred to as multi-channel, or clicks and mortar, firms.

Dot coms, however, require further categorisation which can be done by defining the type of buyer and seller.

Business to Consumer - B2C
These dot coms offer products to consumers and include the classic dot coms such as Amazon and Boo. It is this category which the media generally tends to refer to when it discusses dot coms.

Consumer to Consumer - C2C
This type of dot com allows consumers to trade in marketplaces with other consumers. eBay being the classic example through the online classifieds and auctions they provide.

Business to Business - B2B
These dot coms trade with other business. Many dot coms tried to extend the eBay idea of marketplaces, also known as exchanges, for whole business sectors where procurement was seen as a fragmented and inefficient process. FreeMarkets, for example, operate auctions for industrial parts, raw materials. B2B has a far lower profile than B2C, but is nevertheless by far the larger part of e-commerce.

Consumer to Business - C2B
This final category of dot com enables consumers to initiate transactions with business. This is exemplified by Priceline who operate reverse auctions in which the consumer states a price for a product, and vendors then compete for their business.

Dot coms may not fit exclusively into any one of these categories. Amazon, for example, started as a B2C company and then diversified into auctions, a C2C activity.

3. What factors led to the rise of the dot coms?

3.1. The growth and commercialisation of the Internet

What was to eventually became known as 'The Internet' was developed in the 1960s through funding by the US military in order to find a means of enabling communication in the event of nuclear conflict (Schneider and Perry 2000).

Until the early 1990s, however, the Internet was the domain of academics and researchers as commercial use was prohibited. A process of commercialisation started in the late 1980s and the wider use this encouraged was to be given a further boost with the emergence of the World Wide Web in the early 1990s. The development of browsers in the early 1990s which enabled web pages to be viewed in a graphical format in colour then brought the benefits of the Internet to a wider community. The World Wide Web was to grow at an exponential rate both in terms of the number of websites and users as shown in Figures 1 and 2. This alerted some in the business community to its potential as a means of communication and as a sales and marketing channel.[1]

[1] To see what the early World Wide Web was like, visit a site such as http://www.dejavu.org

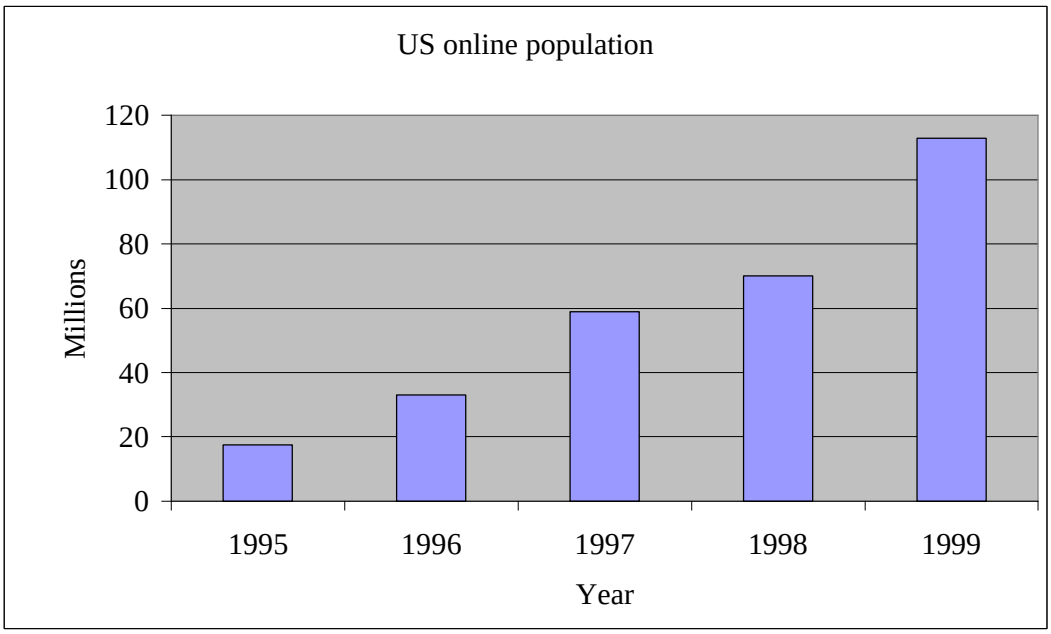

Figure 1: US Online population 1995 - 1999
Source: http://cyberatlas.internet.com. Date accessed December 2003.

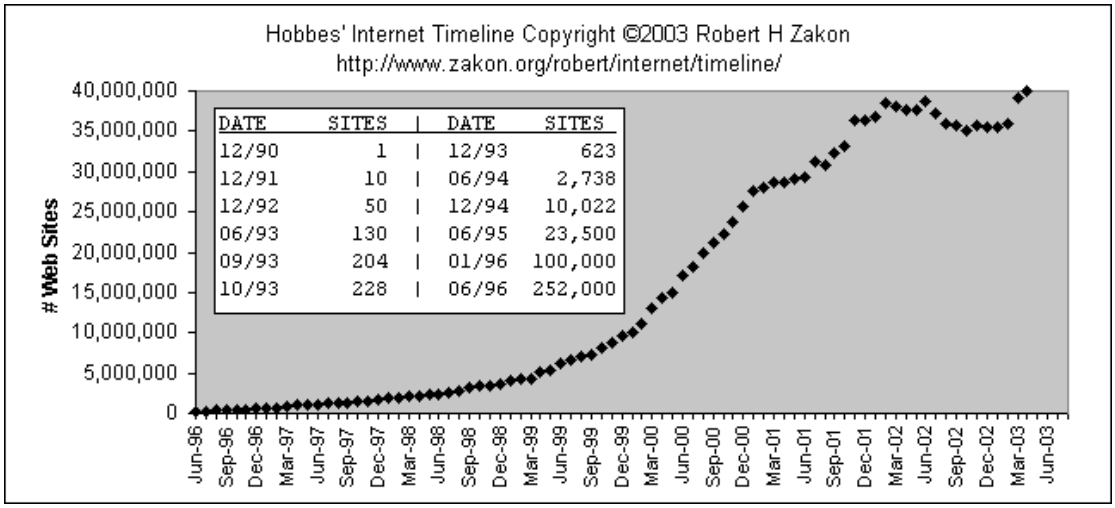

Figure 2: Growth in the number of Websites from 1990
Source: Hobbes' Internet Timeline Copyright (c)1993-2003 by Robert H Zakon http://www.zakon.org/robert/internet/timeline. Date accessed December 2003.

3.2. The lowering of entry barriers through the Internet

One would-be entrepreneur was Jeff Bezos, a Vice President with D.E. Shaw and Co, a New York trading firm. Spector (2000) describes how in 1994 after Bezos was told by his employers to research potential categories for retail on the Internet, he placed books at the top of the list. After rejection Bezos decided to pursue the idea himself, giving up his highly paid job and founding Amazon in 1994.

The initial founding of Amazon through Bezos' own resources illustrates how the Internet lowered barriers to entry in many markets. The World Wide Web offered access to a wide

market without the investment in retail outlets across the whole country that would have brought with it a need for much larger funding at an early stage and a concomitantly higher risk.

3.3. Venture capital

New firms require financing to grow and as Audretsch and Thurik (2001, p304) argue, in the entrepreneurial economy "traditional means of finance are no longer appropriate" as they are based on the notion of lower risk. This statement leads us to the crucial role played in the funding of the dot coms by venture capitalists and also by informal capital sources, for example wealthy individuals and firms.[2]

As the National Venture Capital Association[3] (NVCA) state, in their most typical arrangement venture capitalists raise capital from investors, who may be University endowment funds, wealthy individuals or organisations, known as limited partners, which forms a fund to be invested in a range of companies which demonstrate the possibility of explosive growth, in return for an equity stake.

The role of the general partners, the venture capitalists who manage the funds, is to judge which firms to invest in and to then oversee the investment with the ultimate goal of exit through either the glamorous route of an IPO or a sale to another firm. The venture capitalist typically looks at a timescale of five to seven years to reap their returns, though the late 1990s were not typical times, and investment horizons were reduced considerably.

The motivation which leads investors to become limited partners is shown by an article published in the Notre Dame (University) magazine in summer 2000 (Cohen, 2000). This describes how the University made a strategic decision to move some of its investment portfolio away from conservative investments, such as bonds and shares in large companies, into venture capital in search of higher returns. Consequently, in 1993 Notre Dame invested $3 million in a fund set up by Sequoia Capital, a famous venture capital firm.

3.3.1. The funding process

At some point, depending on their resource requirements and desire for credibility, new firms will look to obtain the involvement of venture capital. The funding provided can be categorised as being in a number of stages – seed/start-up, early, expansion and later stage – which reflect the development of the enterprise.

As these stages progress, with other things remaining equal, the uncertainty of the firm as an investment prospect decreases and consequently the price paid for a stake in the firm increases as its prospects become much clearer. The overall levels of these investments, valuations given and stages will depend on the opportunities for quick and easy exits.

Seed/Start-up stage

The start-up of a dot com is, by its nature, high risk with the resources typically provided by the entrepreneur and/or friends and family, as occurred when Pierre Omidyar founded eBay with his own resources in 1995.

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[2] Examples of such firms were Dell and Intel who each had their own specialist venture capital arms. As the 1990s progressed dot coms themselves would also become active investors.

[3] http://www.nvca.org

Conversely, Bronson (1999) describes how the venture capital firm Draper Fisher Jurvetson (DFJ) invested in a seed/start-up to the tune of $300,000 for a stake of 15% in an idea for a free email service, which would become the ubiquitous Hotmail.

Early stage
Early stage is where venture capital will generally start to get involved. Early successful examples from the leading venture capital firms, which became part of the dot com legend, include:

- The investment by Sequoia Capital in Yahoo in 1995, as described by one of its limited partners Notre Dame University, "For a total investment of less than $2 million Sequoia received nearly a third of the company" (Cohen, 2000).
- The investment by Benchmark Capital, itself a new firm, of $5 million in 1996 for an original stake of 22% in eBay (Southwick, 2001).
- In the UK, Apax Partners invested $12 million in QXL, a European version of eBay, for an undisclosed stake in 1999[4], which was the largest investment at the time in any European e-commerce venture.

Fuerst and Geiger (2003) state that early stage investment will typically be used to complete the development of the product, pull together a professional management team and develop the marketing side of the business. As these investments are higher risk the venture capital firm will generally want to take an active role in overseeing their investment by taking a seat on the board. The start-up will now need to deliver on its potential to achieve further funding when the initial capital is exhausted, something the venture capitalist can use as a form of control.

Entrepreneurs also actively seek the involvement of elite venture capital firms to gain credibility. Stross (2000) cites the example of eBay whose founder Pierre Omidyar already had sufficient resources to fund further development through personal wealth gained from the sale of an earlier entrepreneurial venture and from the early profitability of the firm. Instead he had looked for venture capital involvement in order to attract an experienced CEO which then led to the investment by Benchmark and the subsequent recruitment of Meg Whitman, an experienced senior executive, as eBay's CEO.

Expansion stage
An example of the expansion stage was the investment of $25.4 million in E-LOAN, the online mortgage company, in 1998 by Yahoo, Softbank Technology Ventures, Softbank Holdings Inc. and Sequoia Capital (E-LOAN, 1998). Early stage funders usually look for the involvement of others to finance this stage, 'other people's money', though they may continue their involvement.

Later stage
An example of a later stage investment was the $102.6 million invested in 1-800-Flowers.com, an online seller of flowers, by Softbank Capital, Benchmark and Forum Holdings BV in 1999 (Kawamoto, 1999). The falling post IPO performance of this firm demonstrated how later stage investments can be at the mercy of the market.

[4] Sources for this are the respective companies websites, http://www.apax.com and http://www.qxl.com.

The economic environment of a booming stock market in the 1990s was ideal for such activity and US venture capital funds showed impressive growth culminating in an average return of 160% in 1999 (Fuerst and Geiger, 2002, p204). Attracted by these returns venture capital investment in the USA soared in the 1990s as shown in Figure 3 below.

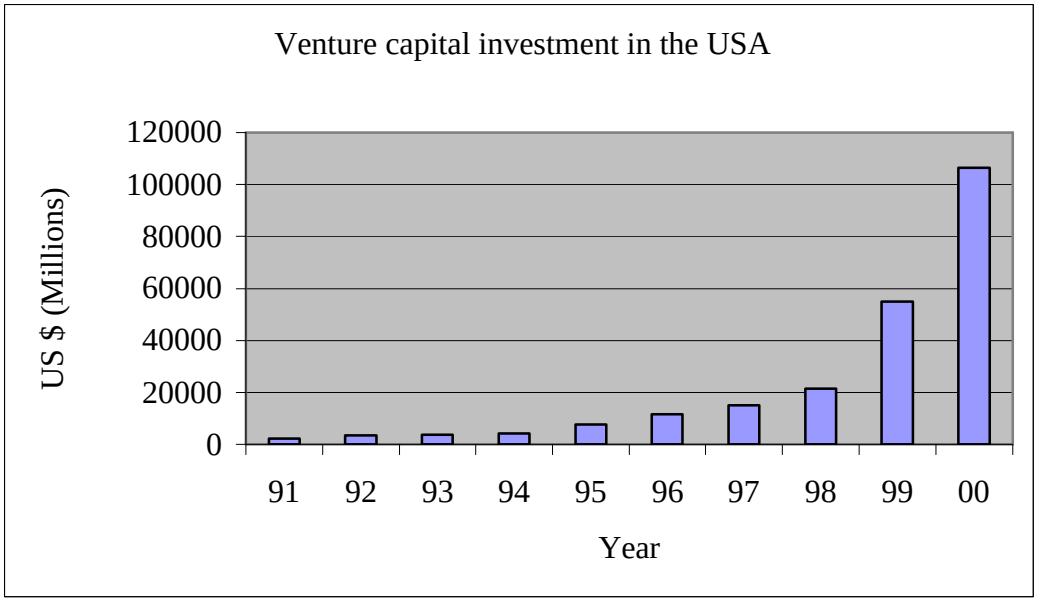

Figure 3: Venture capital investment in the USA 1991 - 2000
Source: Developed using data from National Venture Capital Association. http://www.nvca.org. Date accessed December 2003.

4. The threat of the dot coms

The dot com impact was wide ranging. It was believed by some that the Internet was about to transform the basis of competition across the whole economy and that the leading firms in this area could become the new Microsofts in terms of market domination. This section will consider the reasons why it was believed by many that the dot coms offered a superior way of doing business.

4.1. The economics of the dot com model

Table 1 which follows illustrates the seeming undeniable logic of the dot com way as illustrated by Amazon; a combination of wide consumer choice (once freed from the constraints of the physical bookstore), low costs and high sales.

BUSINESS MODEL COMPARISON

	Land-based	Amazon.com
Superstores	439	1
Titles per superstore	175,000	2,500,000
Occupancy costs (% of sales)[a]	12%	<4%
Sales per operating employee	$100,000	$300,000
Inventory turnover	2-3X	50-60X
Sales per square foot	$250	£2,000
Rent per square foot	$20	$8.00

[a] Includes Rental, Depreciation, Amortization, and Pre-opening expenses
Table 1: Business model comparison of Amazon versus a Land-based retailer
Source: William J. Gurley, "Amazon.com: The Quintessential Wave Rider", Deutsche Morgan Grenfell, June 9, 1997, taken from Katz L. E. (2002) Amazon.com Going Public, in Gompers P. A and Sahlman W.A. *Entrepreneurial Finance - A Case Book*. New York, John Wiley and Sons, 538-568.

A more extreme example of the way in which disintermediation could occur lies in digital products, i.e., any product which can be represented in computer readable form, for example, music and news. With such products the Internet enabled the disintermediation of further parts of the value chain, by removing the need even for physical production and distribution. This threatened to radically change the economics of such industries by lowering the scale required to compete in the industry.

4.2. Enhanced levels of customer service

Porter and Millar (1985, p7) argue "that most products have had a physical and information component". They define the information component as "everything that the buyer needs to know to obtain the product and use it to achieve the desired result" (p7). Where products have a high information content – for example, banking, books, newspapers and travel and tourism – the Internet should be able to provide an enhanced service.

But a web site can be more than a source of generalised information, it can provide 'personalisation'. When a user enters a website their preferences can be noted through registration and/or the use of cookies – files that a website visited creates and stores on the visitor's computer, enabling tracking of their website activity which can be fed back to them at their next visit. Mendelson and Meza (2001) describe how Amazon uses these technologies to offer a personal storefront to returners to the site, featuring products from categories they have purchased previously. This was taken a step further with comparison of purchasing patterns, meaning that Amazon could recommend products to customers that had been bought by consumers with similar tastes, both through the website and through targeted emails. The increase in sales revenue from under $16 million in 1996 to $2.7 billion in 2000 (Amazon, 2001) showed the attraction of this innovative approach to the consumer.

The advantages discussed above are undoubtedly positive aspects of dot coms, but such services can be offered just as readily by established firms who set up Internet channels.

Many established companies, feeling under threat by these upstart companies, thus sought to react to the threat by establishing their own Internet offerings either by extending their own operations to offer Internet services or by setting up their own dot coms. It was believed, however, that existing firms would face the problem of cannibalisation, whereby existing customers would merely be diverted to the new channel with the addition of a new cost layer. This was a factor in Barnes and Noble's sluggishness in responding to the threat of Amazon, failing to open their Internet subsidiary until 1997.

In addition to this existing channels – both internal and/or external – could fight against any migration to the Internet, a situation known as channel conflict. This occurred when Compaq had their products removed from the leading retail outlets in Australia when they decided to sell online (Coltman, Devinney, Latukefu and Midgley, 2002).

4.3. The new economy - first mover advantage and network economics

Much emphasis was placed on the idea of a 'new economy' and how first mover advantage using the Internet would lead to market dominance. The term 'new economy' as used in the dot com arena was in part a popularisation and distortion of the ideas expressed by Arthur (1996) on the phenomenon of dominant firms in high technology markets. A central tenet of his argument was the idea of network effects, which other writers refer to as network externalities, which occur when there are wide benefits from the use of a product.

A network effect can be seen clearly in eBay, which is attractive for those looking for online auctions as it offers a wide variety of products for sale. This increase in demand then leads to increased supply as the site becomes more attractive to sellers. Great importance was thus placed on speed to market to achieve such network effects.

5. The dot com IPO frenzy

The venture capital investments discussed in section 3.3 enabled the dot coms to grow but most of them would go on to launch IPOs to provide further resources and credibility in the marketplace.

Significantly, an NVCA press release in January 2000 (NVCA, 2000) revealed that 50% of IPOs in 1999 were venture capital backed, which illustrated the opportunities for early stage investors. As John Fisher of DFJ stated:

"With the stock market valuing internet-based companies at huge multiples compared with revenues, companies can go from start-up to initial public offering in under two years, compared with a more sedate five-year period with traditional high-tech start-ups" (Quoted in Foremski, 1999)

Many of the IPOs shares would rapidly accelerate as investors were attracted by the potential of the dot coms. The phenomenon of the 'day trader', whereby individuals would make short term investments in hot shares, gave a further momentum to share prices. The collective result of all this interest was that many dot com showed astronomical first day returns as shown in Table 2.

Company	Description of company	Date of IPO	Offer Value (Money raised)	First Day Share Performance from IPO Price
Ariba	B2B marketplace	June 1999	$115 million	291%
Ask Jeeves	Search engine	July 1999	$42 million	364%
eBay	Auction and classified site	September 1998	$63 million	163 %
FreeMarkets	B2B marketplace	December 1999	$173 million	483%
iVillage	Women's Portal	March 1999	$88 million	233%
Neoforma	B2B marketplace	January 2000	$91 million	303%
Priceline	Reverse auction pricing website	March 1999	$160 million	331%
The Globe	Hosting service for websites	November 1998	$28 million	442%
Yahoo	Portal and search engine	April 1996	$34 million	154%

Table 2: Selected dot com IPOs in the USA with large first day gains
Source: Developed using data from http://www.ipodata.com, http://www.forbes.com and http://www.ipocentral.com. Date accessed December 2003.

In Europe similar forces were at work, as "the number of technology companies listed on Euro.NM, an alliance of five new European equity markets, doubled in 1999" (Raik-Allen, 2000). One extreme example of this was the case of the UK dot com JellyWorks – a firm set up by the 24 year old entrepreneur Jonathan Rowland to invest in dot coms – moving from incorporation in October 1999 to a floatation in December valuing the company at £10 million. Within 3 days the company's value had increased to £200 million, a gain of 2000% (BBC, 1999).

These share price gains thus produced valuations which defied traditional thinking "about profits, multiples, and the short-term focus of capital markets" (Desmet, Francis, Hu, Koller and Riedel, 2000, p1). Traditional measures such as p/e ratios could not be used for many of these firms as these required profits, and even for those firms with profits these ratios were extremely high[5]. As Canzer (2003) states, average historic p/e ratios for the Standard and Poor index had varied considerably from 5.9 in 1944 to 35 in 1999, reflecting the future prospects of the general economy at these times. However, many of the dot coms were trading at p/e ratios of above 100 with Yahoo for example having a ratio of over 400 in November 1999, an enormous valuation by any standards.

[5] The price of a share of a company's public stock divided by the company's earnings per share. For most companies normal p/e ratios would be somewhere between 10 and 20. However, if a company is expected to show strong future profitability a 'high' p/e ratio can be justified as the profit growth will ultimately bring the ratio back to more normal levels.

This led analysts to use measures which looked at future potential. Metrics looking at sales growth and website traffic would thus became important. If companies could demonstrate rapid growth it was argued that they could justify higher than normal valuations. The sales growth Amazon had shown of 938% in three years offered some support to its high valuation though at some point it would have to deliver profits.

Valuations of 1999 dot coms are placed in perspective by the comparison of eToys, the online seller of toys, as opposed to its established bricks and mortar rival Toys R Us, undertaken in August of that year by a US asset management firm, as illustrated in Table 3.

	eToys 99 (Estimated)	Toys R Us 99 (Estimated)
Sales	$100 Million	$11.5 Billion
Earnings (Profit)	($123 Million)	$400 Million
Earnings per Share	($0.91)	$1.61
Price to Earnings	Loss	10x
Market Valuation	$4.9 Billion	$4 Billion

Table 3: Comparison of the valuations of eToys and Toys R Us in 1999
Source: http://www.centman.com/Library/Articles/ Aug99/ToysRUsvsEtoys.html. Date accessed December 2003.

As the report stated: "So, the market is saying that eToys is worth $900 million more than Toys R Us, even though eToys is losing $73 million and Toys R Us has net profits of $376 million" (Century Management, 1999).

5.1. Harvest

The early stage investors were thus sitting on enormous gains, provided the share levels did not collapse before the expiry of the lock in after the IPO. Venture capital firms historically had made their names through 'home runs' – obtaining an equity stake in a new firm and eventually harvesting an enormous profit for themselves and their limited partners. Benchmark Capital, scored its home run with the 49,900% gain Bob Kagle, a general partner of the firm, revealed his firm had made on their original investment in eBay (Himelstein,1999).

Avoiding an IPO through a trade sale was an alternative route that dot coms could take. As Schultz and Zaman (2001) state, the amount raised through IPOs was smaller than that received through the sale of private Internet companies, an example of this being the sale of Hotmail to Microsoft for a reported $400 million in 1997 (Perkins, 1998).

With the well publicised successes of venture capital an increasing number of investors tried to get access to the new larger funds announced by venture capital firms. There was also a pronounced shift in venture capital funding towards early stage riskier investment. As Sussis (1999) made clear, "Interestingly, an ever increasing number of investments are early stage. From 1995 to 1999 (YTD) 53% of investments in technology/Internet-related companies came in the early stage while only 28% of investments in non-Internet related companies came in early."

Valuations were also rising at each stage as entrepreneurs gained the upper hand over venture capitalists keen to use their large funds and overcrowded marketplaces required large brand

building programmes. 1999 was thus to see record investments in single rounds of funding which included a $275 million round for Webvan, the online grocery firm (NVCA, 1999). The hype that accompanied the dot com phenomenon played an enormous part in the rise of these firms with sports style coverage of dot com shares on the main US TV networks feeding the frenzy. Analysts from investment banks – for example, Henry Blodget of Merrill Lynch – were tipping dot com shares whilst their firms were simultaneously advising the same firms. This represented a potential conflict of interest as Treanor writes:
"The accusation is that the analysts inflated their recommendations on shares so that their investment banking employers could earn lucrative business from the companies whose shares were being touted." (2002)

A further charge made against investment bankers was that the allocation of IPO shares and pricing decisions were made to obtain future business. With the enormous first day gains access to shares at the IPO was seen as a route to quick financial gain, and was unsurprisingly not available to all. In a practice known as 'spinning' investment bankers would allocate shares to firms to gain future business, a charge made by the NASD - the regulatory body for the securities industry and the Nasdaq[6] - against Frank Quattrone, head of technology banking at Credit Suisse First Boston. Loughran and Ritter (2002) also argue that IPOs were underpriced by underwriters in the late 1990s to increase the potential value of the allocations[7].

[6] Historically, NASD stood for National Association of Securities Dealers, though now it is just known as NASD.
[7] Against this argument of underpricing many IPOs increased their price to take advantage of high demand, with one such example being iVillage, where the price was increased 71% before its IPO.

6. Industry shakeouts

It is normal for innovations as dramatic as e-commerce to lead to many new entrants as entrepreneurs and investors aim to make profits. Whilst the threat to the incumbents appeared real enough, at some point the dot coms would need to deliver on their promise. One way or the other there would be a shakeout, either of the old order, or of the new entrants if the status quo was not seriously challenged.

Day (1997) analyses the process of consolidation, which is typical across industries and identifies two types of business shakeout, boom-and-bust and seismic-shift.

6.1. Seismic-shift

According to Day the seismic-shift syndrome strikes stable, mature industries with relatively high profit levels which have been sheltered from the ravages of competition through the existence of what he calls 'isolating mechanisms', which in conventional language are barriers to entry. Examples of isolating mechanisms given by Day are patents, regulatory barriers, close personal relationships which exist in an industry and local tastes which could be added to with other factors such as economies of scale. The impact of the seismic shift is to remove one of these isolating mechanisms and shake up the existing market.

Day gives four common triggers for a seismic-shift; deregulation, globalisation, technological discontinuity and competency predator. Of these triggers 'technological discontinuity' best describes the potential impact of the dot coms on many stable industries such as retail banking, music and the media as seen in the late 1990s. It appeared that the Internet lowered the minimum efficient scale and enabled enhanced services to be offered by the mew entrants.

However, there was no such seismic shift in any of these sectors. To use a term from a later related article by Day et al (2003) this is because these were re-formed markets, where new technology does not change the fundamental principles of how the market operates. In this case the Internet makes the industry more efficient rather than transforming it, and therefore does not represent a threat to the dominance of existing players. Day et al (2003) illustrate this by using the example of the booming market for business-to-business exchanges in the late 90s as new entrants thought they could replace existing practices. By July 2002 57% had exited the market indicating the existence of the boom and bust syndrome which we shall now examine.

6.2. Boom and bust

Day states that the boom-and-bust syndrome is typical in hot emerging markets – an accurate description of the dot com phenomenon – or in highly cyclical businesses, such as construction. As a boom develops, "an unsustainable glut of competitors is attracted to the market at a rate which overshoots the industry's long-term carrying capacity" (1997, p94). At some point however, a reality check enters the picture and a shakeout then occurs as excess supply impacts on margins and firms exit the industry.

Markets as diverse as groceries, pet supplies, toys and furniture saw many new entrants as the early pioneers were copied. These entrants believed that the Internet had fundamentally changed the dynamics of these markets (seismic-shift) and that they could benefit from this. If this had been the case, there would still have been a boom-and-bust shakeout of the new players. In reality, however, all that was really seen was the latter syndrome at work.

Day et al (2003) also consider breakthrough markets, only made possible through the advent of new technology, which include search engines, portals and online auctions. New entrants in such markets will not have to take market share from existing players, rather there will be competition from the new players entering the market. According to their thinking this would lead to a large number of firms entering breakthrough markets, and a few survivors after a boom-and-bust shakeout. A look at the history of the search engine market indeed shows many entrants and some exit and consolidation but not a shakeout on the scale Day et al would have us believe, which is probably due to the relatively low costs in running a search engine[8]. Even in the area of portals, where the need for updated content represents a major expense, whilst the big players (AOL, MSN and Yahoo) dominate the market, both in terms of users and advertising revenues, players whose demise was predicted in 2001 such as Walt Disney's Go still exist. This all suggests that the shakeout forces in breakthrough products will operate in a different manner to that suggested.[9]

[8] This is a point made by Danny Sullivan, the editor of Search Engine Watch, at http://www.searchenginewatch.com

[9] Day's 1997 article does offer a plausible reason for the lack of a more severe shakeout in the portal market. He uses the term 'inhibitors', which is effectively another term for barriers to exit, to describe the factors which may lead a firm to stay in a market. In the portal case with Walt Disney's Go the inhibitors are probably the loss of face from exit and the belief that the market is too strategically important to exit.

6.2.1. The April 2000 crash

As we have seen there were always strong business fundamentals that would lead to the eventual downfall of many of the dot coms. From a peak of 5046.86 reached on 10th March 2000 the Nasdaq, where most of the dot coms were listed, fell as illustrated in Figure 4.

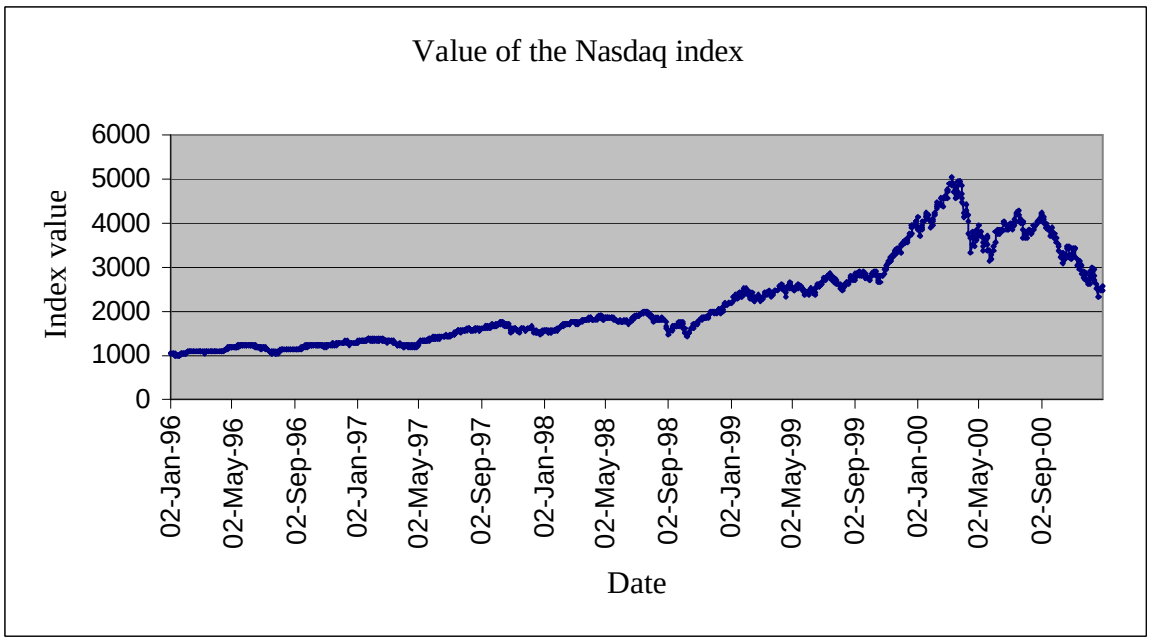

Figure 4: The value of the Nasdaq index January 1996 - December 2000
Source: Developed using data from Yahoo Finance, http://finance.yahoo.com/
Date accessed December 2003.

The sustained falls which came after 27th March 2000 were to see the four largest one day falls in the history of the index as investors sought safe havens for their money. In aggregate these falls lowered the value of the Nasdaq by over 34% from its peak to a low point in April 2000. Whilst the market did recover temporarily in April this was to prove a false dawn as the trend was firmly downwards, and by the end of 2000 the Nasdaq had fallen 51% from its peak.

The dot coms had flourished along with the technology boom. As the technology boom appeared to be ending investors were thus more likely to sell 'risky' shares which led to falls in the dot coms looked at earlier as shown in Table 4.

Company	Change in share price 27th March – 21st April 2000
Amazon	-28%
Ariba	-43%
Ask Jeeves	-62%
EBay	-37%
FreeMarkets	-68%
iVillage	-40%
Neoforma	-76%
Priceline	-26%
The Globe	-52%
Yahoo	-39%

Table 4: Changes in selected dot com share prices 27th March - 21st April 2000. (All data adjusted for dividends and splits).
Source: Developed using data from Yahoo Finance. http://finance.yahoo.com. Date accessed December 2003.

However, the dot coms had always lived volatile lives – for example, in July to August 1999 many of these dot coms had experienced considerable falls in their share prices, as illustrated in Table 5.

Company	Change in share price 2nd July – 4th August 1999
Amazon	-22%
Ariba	+40%
Ask Jeeves	-58%
Ebay	-35%
FreeMarkets	N/A
iVillage	-41%
Neoforma	N/A
Priceline	-30%
The Globe	-35%
Yahoo	-28%

Table 5: Changes in selected dot com share prices 2nd July – 4th August 1999. (All data adjusted for dividends and splits)
N/A These companies were not public at this time.
Source: Developed using data from Yahoo Finance. http://finance.yahoo.com. Date accessed December 2003.

The difference was that in 1999 most of them had bounced back (illustrated in Table 6), whilst after April 2000 share prices simply collapsed.

Company	Change in share price 4th August – 31st December 1999
Amazon	72%
Ariba	394%
Ask Jeeves	303%
eBay	65%
FreeMarkets	611%[a]
iVillage	-41%
Neoforma	N/A
Priceline	-28%
The Globe	-26%
Yahoo	258%

Table 6: Changes in selected dot coms share prices: 4th August – 31st December 1999. (All data adjusted for dividends and splits).
[a] For those companies not public on August 4th the change in price is calculated from the IPO offer price to 31st December.
N/A This company was not public at this time.
Source: Developed using data from Yahoo Finance. http://finance.yahoo.com/
Date accessed December 2003.

Market sentiment had also turned against a number of the higher profile dot coms well before the downturn of April 2000. Webvan, the online grocery store, had launched their IPO in November 1999 and after a fall and then rise of one third in the share price began to follow a sharply downward trend, leading to its eventual bankruptcy in August 2001.

6.2.2. What burst the bubble?

The basic reason for the collapse of the dot coms was a generic trigger listed by Day (1997) – they ran out of money. Few of the dot coms had positive cash flows as the emphasis had been gaining market share and increasing the number of visitors to the site, to gain first mover advantage and network effects. Without profits in sight the dot coms could only survive for as long as they had the support of their funders, which required confidence in the future value of their holdings. The triggers which have been put forward for the crash can be summarised as follows:

Overvalued stock

With the US on a long bull market and recording massive gains, particularly on technology shares with the Nasdaq up over 85% in 1999, many were predicting a general market correction and a collapse of dot com values which had reached ludicrous levels. These valuations were reliant on investor confidence which, with the influx of amateurs, could easily change. The credibility of etailers selling physical goods had been hit by their performance in the Christmas of 1999, with the prime example being eToys who failed to deliver 4% of orders in time. As a consequence of this adverse publicity eToys and Amazon both suffered falling share prices after the holiday season.

The end of the technology boom

Laudon and Traver (2002) identify the resolution of millennium bug issues and price wars in the telecoms sector as making the technology sector less attractive, leaving dot coms vulnerable. In addition to these factors, the Microsoft ruling – which held that Microsoft had acted as a monopolist in the browser market – hit market confidence in technology, corresponding with the third largest ever fall in the Nasdaq index.

Poor financial judgement

Quinn Mills (2001, p23) argues that a "perverse public-private partnership led by Wall Street and the Federal Reserve" first created the dot com bubble, and then destroyed it. He argues that fears of a recession brought on by the millennium bug led to a loosening of monetary policy in 1999 which merely led to players in Wall Street adding to the dot com feeding frenzy. The last quarter of 1999 was indeed to see a further spike in valuations and IPOs which made a hard landing more likely.

However, whilst interest rate policy may have exacerbated the boom and initiated the bust it appears hard to see how any macroeconomic policies could prevent the collapse of firms who were basing their hopes on transforming entire industries.

In all likelihood, a combination of the above factors leading to a loss of confidence is the most plausible explanation of the timing of the crash. At some point investors would inevitably sell dot com shares to take profits, though with the day traders adding to market irrationality it was hard to say precisely when that would be.

Once share prices started falling fear of further falls became a self-fulfilling prophecy, with the irrational exuberance that had driven the market up giving way to a blind panic that brought the market crashing down. Dot coms rapidly run out of money, as venture capitalists were unwilling to back them, whilst money raised through IPOs was used up fast – if it was not already gone.

For firms who had not yet taken the IPO route this source of finance was now far more difficult, as the UK company Boo found out when plans for an IPO were cancelled in April, with the company going bust in May 2000. The trigger event in the UK appeared to be the IPO of Lastminute.com in March 2000, whose shares launched at £3.80, and after a quick spike increasing by 28% (BBC, 2000) fell rapidly down in value, to a low of £0.27 in 2001 (BBC, 2001a).

Initially it was thought this slump was confined to consumer based dot coms and that the sturdier B2B sector was still a safe investment. However, this was to be an incorrect assumption as not only was the whole Internet sector (however loosely defined) savaged, but so too was the technology sector. The wider economy would be affected too, with the indexes of stock markets across the world falling, as the world was engulfed in a long bear market.

7. Lessons for entrepreneurs and investors

Section 6.3 considered the triggers to the dot com collapse in March 2000. However, there were fundamental problems with the dot com sector which would have eventually brought a correction. This section will cover these problems and in doing so offer some insights into successful versus unsuccessful dot coms, both within and across sectors.

7.1. Most re-formed markets cannot be transformed

7.1.1 Lack of scale

What was often forgotten in the hype about the dot coms was their lack of size in terms of revenue. Schultz and Zaman (2001) in a study of a sample of 299 Internet publicly traded stocks in 1999 found that less then 25% had sales of $25 million in the previous quarter.

Whilst a minority of dot coms such as Amazon had large revenues most were small players. A fundamental problem that the B2C e-commerce firms dealing with physical goods were faced with was their lack of scale in areas such as logistics.

Focus on Amazon and Warehousing

Amazon started off without any of its own warehouses and aimed for a zero inventory model. However, in order to guarantee availability and combine books from different suppliers in one package they had to develop capabilities and hold their own inventory (The Economist, 2000). To quote from the Amazon annual report 1999 "We grew worldwide distribution capacity from roughly 300,000 square feet to over 5 million square feet in less than 12 months" (Amazon, 2000, p2). Whilst Amazon have developed a reputation for effective delivery this has clearly come at a significant price.

A solution to Amazon's problem is to offer warehousing services to other firms, as shown by the sale of Toys R Us merchandise through Amazon's site. The effort to expand from books to other products such as videos, CDs also offers lower costs through economies of scope.

The Amazon case throws light on the failure of other dot coms which operated at much smaller scale. Webvan, the online grocery firm, developed a state of the art warehousing and distribution infrastructure which would enable them to cost effectively deliver to individual households. However, they were unable to attract sufficient demand and in 1999 operated at just 20% of capacity (Banks et al 2001). The economics of delivery to single households are also not attractive and require large, regular order sizes to be viable, something Webvan could not persuade enough people to do. Delivery of physical goods also has to face the realities that working people are not at home during the day, congestion problems and the issue of returns.

7.1.2. The costs of reaching customers

The development of brand names assumed great importance as many markets went through an overcrowded boom phase. To quote John Doerr of Kleiner Perkins Caufield and Byers at the height of the Internet boom, "We are living in the Internet land-grab era." (Perkins, 2000). This led to dot coms pursuing extravagant advertising campaigns, some even buying TV advertising at the Super Bowl at a cost of $2.4 million per slot (The Economist, 2001).

In contrast to the new dot coms, established firms already had marketing campaigns across the whole range of media which could be expanded, at marginal cost, to include their e-commerce operations simply by adding their web address. Furthermore, their existing off-line campaigns are where most of the potential e-commerce customers can be reached. The severe costs of customer acquisition that the dot coms thus faced are shown by the experience

of Bank One in the United States which set up the Internet only bank Wingspan. To quote Andrew Hilton "Bank One spent US $150 million last year on marketing Wingspan which works out at around US $18,000 a year to acquire each customer" (2000, p12).

7.1.3. Customer behaviour is hard to change

After the euphoria of the Internet boom it became apparent that behaviour is harder to change than had been anticipated. Day et al (2003) explain that even though B2B exchanges offered great potential efficiency savings they ignored the trends across manufacturing towards reducing the number of suppliers and also the inertia which comes from the risk of change. There is a related fundamental problem for the B2C segment. Many people like to shop in 'real stores' whether to examine products or for social reasons – shopping on-line lacks that certain 'feel-good' factor.

7.1.4. Planning

Any new business has to gain credibility, whether it is a new café or a dot com. Many dot coms, however, overpromised and underdelivered, with poor or late delivery of products being a common complaint. The UK fashion retailer Boo was a particular example of poor planning with a high profile campaign for the launch of their website being wasted when the site was not ready on time (Laudon and Laudon, 2002).

7.1.5. The multi channel future?

There is evidence that many of the population prefer a multi channel experience. McKenzie (2003, p32) in a study of banking quotes Christine Skouenberg, an analyst at the research consultancy Datamonitor, "The greatest change in bank's approach and strategy in multi-channel banking is the fact that the branch is coming back into focus". Many consumers may use the Web for researching their purchases and then choose to buy in a face-to-face environment. This is more likely to be the case for higher value products.

7.1.6. The world wide wait

The dot coms, and many other firms who moved to adopt e-commerce, had overly optimistic views on the ease of use of websites. For multi-channel firms this was an annoyance but for dot coms it threatened their only source of revenue. A general issue has been the lack of broadband connections that enable fast download of websites including graphics and video. In the USA and UK the vast majority of the population have narrowband connections, dial up using a modem, which are far slower.

Thus many customers who attempted to use websites gave up in frustration, faced with slow and complex, websites. The Boo website, for example, demonstrated how the use of a great many graphics made the site too slow. Indeed, 40% of visitors on the day of launch could not access the site (Laudon and Laudon, 2002), the equivalent of finding the doors to a high street store locked!

Another factor that inhibited the growth of e-commerce was the fear of fraud, even though most web sites use encryption methods to secure data and moreover publicised this fact.

7.1.7. Adaptive survivors?

Day et al (2003) suggest that in re-formed markets only what they term 'adaptive survivors' – those who find a protected niche by retooling their strategy and enhancing existing relationships – will survive. They give the example of Neoforma, which started as an

independent exchange for the medical industry. As demand for such exchanges did not grow as anticipated, due to the factors discussed in section 6.1. Neoforma transformed itself into supplying and operating marketplaces to support existing purchasing activity in the industry. This links in well with the advice of Sahlman (2002, p90) who advises that one should sell "ammunition to all sides of the war without end" – in this context facilitating and improving existing activity – rather than engaging in direct combat, which here means replacing existing activity.

Competing using the unique features of the Internet

Some sectors, however, particularly those that are concerned with the exchange of information offer a more optimistic view for dot coms in re-formed markets. The key principle here is that new players add value using the unique features of the Internet in a way existing players find difficult to counteract.

- **Lastminute.com,** the UK firm which emerged selling excess travel inventory, has continued to grow and in November of 2002 declared its first quarterly pre-tax profit. It has shown a steadily recovering share price which in August 2003 stood at over £2.70 after strong growth and on the rumours of a takeover bid. The threat of forward integration, or disintermediation, from suppliers selling discounted tickets on their own websites has not happened to any significant degree. As Martha Lane-Fox, a co-founder, stated in an interview "Companies can't do it on their own website because they fear cannibalisation" (Quoted in Chaffey, 2002, p58). Lastminute.com also gained much needed credibility by its appointment of Alan Leighton, the former Chief Executive of the Asda UK supermarket chain which, as its Chairman, thus bringing in some 'old economy' skills to the company. The company has also grown to achieve economies of scale through acquisitions and diversified through its purchase of a car hire firm to enable it to offer a comprehensive travel service.

  It is fitting that the founders of this firm in summer 2003 appeared to have options to harvest through a sale, just under 4 years after start-up, as after being media icons in the UK in 2000 they were to be heavily criticised following the handling of their IPO and a falling share price.

- **Shutterfly**, a US firm, have emerged to offer web based photo services. They enable users of digital cameras to upload their pictures and enhance them, for example through removing red eye, and enable the sharing of pictures with family and friends. Shutterfly also offer prints, a realisation of the need to improve the existing customer experience and not totally replace it.

Other dot com firms who have succeeded in re-formed markets through e-commerce include financial information sites, dating sites and pornographic sites. The latter two categories are perhaps a reflection of today's busy world and are encouraged by the anonymous nature of the Internet, given that such services can be used without any of the embarrassment that their use in the real world might result in.

7.2. Dominating breakthrough markets through first mover advantage

Day et al (2003) emphasise the importance of first mover advantage in breakthrough markets.

- eBay is clearly an example of a winner as demonstrated by its strong financial performance, illustrated by a report in Business Week in March 2003 "Last year, eBay's profits jumped 176%, to $250 million, on a 62% rise in sales, to $1.2 billion" (Hof, 2003). Its continued dominance of its market, facing off challenges from both Yahoo and Amazon, who attempted to cross sell auctions to their existing customers and attract eBay customers, is an indication of the strength of its network effects. There has also been a realisation of the need to react to a changing market. Growth has been achieved by diversifying into a wide range of auction categories, such as cars with eBay now being the largest used car market in the United States. Moreover, the company has recognised that asynchronous auctions can be a tedious format and reacted by offering a 'buy it now option' and diversified into fixed price sales through its acquisition of Half.com. Finally, large retailers such as IBM have been invited to sell at eBay through the development of the eBay stores format.

Being the first mover does not guarantee continued dominance of a market, in online as well as in conventional markets. Interestingly, Day and Fein in an earlier related paper (2001) listed Yahoo as an example of a pure play winner, which few would have disagreed with at the time. After Yahoo's early dominance Google, who were founded in 1998, have gone on to provide serious competition. Yahoo now have only a narrow lead (26% versus 23%) in consumer searches in the United States, whilst Google have actually drawn ahead in worldwide English searches (33% versus 24%) (CyberAtlas, 2003).

How did Google pull this off, given that Yahoo appeared to be doing all the right things, offering portal services, such as news and email, to keep users on their site? In the early days of the Internet it was also believed that Yahoo's manual indexing of relevant websites to improve searching added value for inexperienced web users. However, Google was very attractive to people who just wanted effective search facilities. Firstly Google developed superior search engine technology which rated sites using a number of measures, for example how many links they have in other documents. Secondly, they went against received wisdom by not offering portal like services – the search engine equivalent of 'stick to the knitting'. The Google experience shows that Yahoo have weak if any network effects in the area of search services. There are no benefits for consumers from wide usage by others, in fact quite the opposite if it slows the service down! In short, the search engine environment had changed as the volume of information grew, users have become more demanding and a rival innovative product has emerged.

- **Betfair**, the C2C gambling website in the UK, set up in 2000 by former professional gambler Andrew Black and Investment Banker Edward Wray, is a further excellent example of a dot com establishing dominance in a breakthrough market. The Betfair website[10] explains that 'users can either bet in the normal way (back) or offer odds to other punters (lay)' and effectively become a bookmaker, which to quote company spokesman Mark Davies "couldn't happen without the internet" (BBC, 2003b).

[10] http://www.betfair.com

Betfair thus avoids the risk function of the bookmaker as it merely facilitates gambling between its users, taking a commission of between 2% and 5% from the winner. The main attractions to users of this site are the better odds on offer and strong network effects as it has reached a critical mass quickly. As a private company Betfair does not publish accounts, though it is estimated that the company has over 90% of the market and will make profits of £25 million (UK) in 2003 just 3 years after start up (Lea, 2003)

7.3. The revival in dot com fortunes

After all the gloom which had engulfed the sector, October 2002 saw the start of a dramatic increase in the value of many dot com companies. The gains shown by the companies we have covered, which corresponded with a rise of over 40% in the Nasdaq index, are illustrated in Table 7, although some of these show high percentage growth because they were at such a low value. Of the eight firms in this table, five are above the offer price at their IPO. Revealingly, all these five firms are consumer websites suggesting that the B2B sites are being held down by a combination of low corporate IT spending and an unwillingness to change established practices. However, to place the optimism for consumer dot coms in perspective, by the summer of 2003 only eBay had managed to trade at close to its previous peak value. Not only that, it would appear that the market is overshooting again with p/e ratios on 1st August 2003 of Yahoo 107.34, Ask Jeeves 581.67 and EBay 93.30 (Yahoo, 2003)

Company	Change in share price 1st October 2002 – 1st August 2003	Share price on 1st August 2003 as a percentage of the all time high
Amazon	+136%	38%
Ariba	+64%	2%
Ask Jeeves	+1531%	9%
Ebay	+96%	86%
FreeMarkets	+27%	2%
IVillage	+197%	2%
Neoforma	+31%	2%
Priceline	+1962%	33%
Yahoo	+226%	13%

Table 7: Changes in selected dot coms share prices 1st October 2002 – 1st August 2003. (All data adjusted for dividends and splits).
Source: Developed using data from Yahoo Finance. http://finance.yahoo.com/. Date accessed December 2003.

What attracted investors was that in general the dot coms had demonstrated the ability to grow in a sluggish market and an increasing number of them were achieving profitability. The path to profit and a regaining of credibility has also been through more rigorous cost controls, as illustrated by the following quote from A. George “Skip” Battle, the CEO of Ask Jeeves:

"Finally, across the entire company we've worked strenuously to reduce costs. Counting the people in the businesses we've acquired, we've reduced our headcount from 850 in December 2000 to 346 at the end of February 2003. Other costs also have been dramatically reduced. We'll average about $22.5 million in expenses per quarter in 2003, as compared to $44 million in Q4 2000." (Ask Jeeves, 2003, p5)

8. The future for dot com entrepreneurs

The previous section has discussed the reasons for the dot com failure, and has made it clear that in most sectors multi-channel firms have the advantage due to their scale and their established channels. However, it is possible to offer some ideas for the future of the dot com sector.

8.1 Lack of venture capital funding

The funding environment for dot com entrepreneurs has remained challenging with venture capital funding falling for two years quarter on quarter after the abnormal peaks of 1999 and 2000. The NVCA reported in July 2003 that funding appeared to have stabilised, though was cautious about a dramatic upturn (NVCA, 2003a). Such an upturn would be dependent on the health of the wider economy and the IPO market. Some commentators believe that if Google went public this could help kick start venture capital activity again. It is possible that this could be the case, though it seems improbable that venture capital activity of the type seen at the peak of the dot com boom will be achieved again. This is no bad thing as the last thing the sector needs is an oversupply of new entrants forcing down prices and increasing advertising costs.

Funding is still available, albeit more difficult to achieve, with FreshDirect – an online grocery operation – raising over $100 million from private investors including Mercantile Capital Partners (Business Week, 2003). After the Webvan experience the FreshDirect funding is somewhat surprising even though the entrepreneur behind the company, Joe Fedele, has a successful track record in previous innovative food ventures which were predicted to fail.

8.2. The continued growth of E-Commerce

A factor which has driven the share prices of dot coms forward is that B2C e-commerce is continuing to grow in both the USA and UK. UK Internet sales, for example, are expected to grow 46% between 2002 and 2003, although most of these sales are to multi channel firms (BBC, 2003b).

In the area of physical products, success is difficult due to the problems discussed in section 7.1. There are, however, some success stories in the sale of physical goods outside of the standard, easy-to-ship categories such as books and CDs, which offer optimism for the future. One such example is Blue Nile, the online retailer of diamonds and jewels confound the view that only low value, standard products can be sold online. The company website[11] explains that it offers a wide choice of diamonds at 20-40% below retail price, and the ability to 'design your own' earnings and pendants using the website. The company states on its website that growth has been driven by customer service, with word of mouth

[11] http://www.bluenile.com

recommendation, rather than by expensive advertising campaigns. Sales of $72 million in 2002 up 48% on 2001, with a net profit indicate the success of this approach.

The BlueNile experience suggests that the early stereotyping of the online consumer is misplaced. Whilst some products may be harder to sell per se there are people who are happy to buy this way and/or who prefer not to visit shops.

As sales volumes grow economies of scale will become easier to achieve. A supporting industry will also develop offering better services: in the UK, for example, logistics firms such as iForce and M-box are emerging to offer an outsourced solution to this cost disadvantage of operating at low levels of capacity.

8.3. Charging for content

Historically, the Internet was seen as a vast free resource. This situation is changing, and as less content is available free, it is self-evident that charging for content will become easier. The endoffree.com website documents sites that are moving over to a charging approach. High profile examples include McKinsey with their Quarterly Magazine and The Economist website's archive.

Even in the field of music where copying has been such a problem the initial success of Apple's iTunes service has indicated a willingness to pay, though it has been reported that users have found a way of copying and sharing files from the site.

As organisations begin to charge for previously free products, they will do well to learn from Shapiro and Varian's advice (1999) on the marketing of digital products (or content).

- Offering a free basic service and payment for the full product, which comes with enhanced features. One example of this is Hotmail where for an annual payment the payee receives enhanced services, such as greater storage and no account expiration.
- The free service comes with annoyance features, for example reminders that it is not as good as the full product.
- Offering samples free of charge, such as abstracts of articles or a sample copy (see, for example, the International Journal of Entrepreneurship Education).

The general point is to attract users with a lesser version of the product and then convert them to paying customers.

8.4. Global reach for niche products

The Internet with its global reach offers the opportunity to make niche markets viable. One example of this is the business of Nick Spurrier, whose second-hand online bookshop now enjoys global reach, whereas previously it relied on a single retail outlet in an isolated British town. The Internet is ideal for such a business as buyers are often searching for books which are out of print and thus difficult to find. This enabled Spurrier to charge higher prices online than he could in his shop which he decided to close.

To quote Spurrier

“I really loved having a bookshop, but the economics of owning it just didn’t add up. I was paying someone £40 a day to work in the shop but I wasn’t taking more than £100 a day. At the same time from the Internet I was making at least £1000 a week. The number of customers has almost trebled since I went online”. (BBC, 2001b)

Whilst Spurrier was not a start-up his experience offers clear lessons to those who may venture into the dot com arena.

9. Conclusion

In conclusion we have looked at the emergence of the dot coms, their meteoric rise, apparent collapse and their recent revival. This article has also attempted to draw out some lessons for the future for aspiring dot com entrepreneurs.

The bankruptcy of so many firms should not be any surprise as any textbook on small business will emphasise how high the casualty rate of new start-ups is. The last few years have also demonsrated that, in most cases, the Internet is not a disruptive technology, which ‘changes the rules of business’, but rather an enabling technology (Porter, 2001) which is generally best utilised by existing firms. Thus one now generally sees increases in e-commerce B2C sales benefiting multi-channel firms who have considerable scale advantages. However, if a weakness can be identified in existing markets successful dot coms can emerge, as Lastminute.com demonstrates. The firms which emerge in the new breakthrough markets such as eBay and Betfair can establish dominance if network effects are present, but the extent of this phenomenon should not be overstated.

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