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“Get Big Fast” and Dot Com Venture Creation**

David Kirsch

Brent Goldfarb

University of Maryland

College Park

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David Kirsch*

Brent Goldfarb

University of Maryland

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Introduction

In September 1998, Jeff Pape founded WrestlingGear.com in the Chicago suburb of Franklin Park. His strategy was straightforward. In the sporting goods industry, wrestling gear represented a small, seasonal market. Every fall, young wrestlers went to local sporting goods retailers expecting to be frustrated. Limited local demand meant that stores carried only limited inventory. Few alternate retail channels existed. A former

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wrestler, Pape remembered this frustration only too well. With the arrival of the internet, he saw the possibility of helping tens of thousands of wrestlers get the gear they wanted and not having to settle for what local retailers happened to have in stock. For wrestling gear – and for many similarly structured industries – the promise of the internet was real. Sales and distribution in thin, fragmented markets would be transformed as the internet allowed retailers to extend geographic reach, aggregate demand and centralize purchasing and fulfillment. Pape started small, initially reselling merchandise that he bought from other distributors. He gradually expanded his operation, first opening a small storefront and later borrowing \$25,000 to finance inventory to shorten his fulfillment cycle. But he did not let sales run ahead of profits. A CPA by training, Pape made sure that every sale produced positive cash flow. Sales doubled annually, and by late 2005, Pape had hired two additional employees, with additional part-time help for the busy holiday and pre-wrestling season. Pape estimated that in 2006 annual revenues would exceed \$1 million for the first time.

Meanwhile, in November 1997, former technology consultant Eric Greenberg and colleagues had founded Scient Corp. in San Francisco. Part consulting firm and part internet incubator, Scient helped firms implement internet technology strategies. With experienced leadership and ample financial backing from prominent venture investors, Scient grew quickly. Within 18 months, the firm employed over 260 people with offices in San Francisco, New York and Dallas. In March 1999, Scient filed for an IPO, and its shares began trading on the NASDAQ on May 14, 1999. In March 2000, at its peak, Scient shares traded as high as \$133.75 per share, yielding an implied enterprise value in

excess of \$7 billion. With total headcount nearing 2,000, this figure translated into almost \$5 million enterprise value for every consultant on the Scient payroll. Through the first part of 2000 revenues continued to increase, but Scient was a services firm, not a technology company. Venture-fattened margins could not be sustained, and following the stock market peak in the spring of 2000, the pace of revenue growth started to slow. Leadership promised that Scient would be one of the few “i-builders” standing tall at the end of the shakeout and refused to trim their ambitious plans. But eventually, as new venture-funded clients evaporated and competition within the consulting business intensified, Scient stumbled. A massive layoff in December 2000 was followed by additional downsizing in 2001 and a merger with iXL, a competitor suffering from similar overcapacity. The merged firm was unable to regain its footing, and in July 2002, Scient Corp. sought protection from its creditors in Federal bankruptcy court in New York. In 2006, Chief Restructuring Officer (and bankruptcy trustee) David Wood prepared to “close the books” on Scient.¹

Both WrestlingGear.com and Scient were “typical” dot com stories. Both Pape and Greenberg identified opportunities arising from the commercialization of the internet. Both created *de novo* ventures to exploit these opportunities. Both sought and acquired outside resources to pursue their respective visions. Both firms might have been considered successes, by some measures at certain points in time. But their differences reveal what was unique about the process of venture creation during the Dot Com era.

¹ In one of his last acts as Trustee, Wood signed a waiver allowing the Digital Archive of the Birth of the Dot Com Era, directed by one of the authors, to collect digital materials from the wider Scient community (Personal communication with the author, April 3, 2006).

A third example brings these contrasts into focus. Few firms came to embody the opportunities (and excesses) of the Dot Com era more concretely than Amazon. Incorporated in Seattle in July 1994 by 30-year old Princeton graduate Jeff Bezos, Amazon grew to become synonymous with the idea of electronic commerce: Bezos' capacious intellect and youthful self-confidence, his stumbling upon the internet while working on Wall Street, his methodical search for the best product to sell online, and finally, his relentless and unapologetic pursuit of growth defined a generation of entrepreneurs. The Amazon story quickly entered the realm of lore. More than a decade later, Amazon exemplified both the strengths and weaknesses of the strategies that characterized this cohort of firms. On one hand, the growth of the company was, quite simply, Amazonian. At the beginning of 2006, the company employed more than 12,000 people with offices spread across 10 countries including India and China. The company website showcased more than 30 online "stores" selling everything from baby oil to motor oil. And annual revenues approached \$10 billion, strong evidence of consistent top-line growth. At the same time, however, Amazon still bore many signs of the growing pains that accompanied this rapid growth. Though nominally profitable on an operating basis, the firm showed relatively poor returns according to traditional accounting metrics. Competition from specialized firms in each of its submarkets was intense and growing, and the long-run sustainability of the Amazon business model remained uncertain.

Whereas WrestlingGear.com followed the traditional path of small business, Amazon and Scient pursued a strategy that came to define an entire generation of internet

technology companies:

Tossing aside about every experience-honed tenet of business to build businesses in a methodical fashion, Internet businesses ... adopted a grow-at-any-cost, without-any-revenue, claim-as-much-market-real-estate-before-anyone-else-moves-in approach to business. This mentality [came] ... to be known as 'Get Big Fast.'²

As many as several thousand internet firms received venture capital funding to pursue Get Big Fast (GBF). GBF was a single, prolonged bet on a future state of the world in which a select group of “winners” would dominate the e-commerce landscape. For Amazon, GBF seemed to have worked, but for Scient and many firms like it, GBF was not a winning strategy.

Each of the three firms discussed above represents an important thread in our understanding of the business history of Dot Com era firms. Get Big Fast was not always a bad idea. A handful of internet firms successfully pursued it, building large, modestly profitable businesses faster than ever before. These firms – Yahoo!, eBay, Amazon, and Monster – came to define the public image of the successful internet company. At the same time, hundreds of also-rans tried Get Big Fast, but discovered that size alone was not sufficient to secure long-term profitability. The failure of firms that had dotted the covers of business magazines, companies like Webvan, Pets.com, eToys, Boo.com, the Globe, and Scient – and the painful financial losses associated with these debacles – guaranteed a generally negative public perception of the Dot Com era. Meanwhile, lost from view, tens of thousands of internet startups followed in the footsteps of WrestlingGear.com. They started small and grew slowly. Many of these companies survived, selling products and providing valuable services online, even as public opinion

² Robert Reid, *Architects of the Web* (New York, 1997): 37.

continued to characterize the Dot Com era as a period of unprecedented failure.

In this paper, we establish a series of starting points for understanding the emergence of the industries associated with the commercial internet. First, we report baseline estimates of the number of internet technology companies created from 1994-2001. Approximately 50,000 companies solicited venture capital to exploit the commercialization of the internet. Of these, less than 15% followed the GBF-model of venture-backed growth. Fewer than 500 companies (<1%) had an initial public offering. Within the larger set of initial entrants, however, the five-year survival rate was 48%. The survival rate is higher than most observers typically predict and similar to that associated with the introduction of other general purpose technologies. Standing in stark contrast to the popular picture of the Dot Com era consisting of a boom phase followed by an unprecedented bust, our findings suggest underlying continuity in the exploitation of entrepreneurial opportunities arising from the diffusion of a new general purpose technology.

The persistence (and conditional success) of a broad cross-section of internet technology companies allows us to reinterpret the prevailing view of the Dot Com era. Conventional wisdom holds that internet firms were over-hyped: *Bad* ideas were *oversold* to gullible investors by entrepreneurs, venture capitalists, and investment bankers playing a multi-trillion dollar game of musical chairs. When the music stopped in the spring of 2000, holders of inflated securities were left standing. These ill-fated investments, and the public perception of failure associated with these investments, led many to believe

that nearly every internet firm had failed. However, observed financial losses did not, in fact, equate with firm failure.

Therefore, we need a different story. In our account, the tectonic changes in the underlying entrepreneurial landscape were obscured by the financial bust. Against a highly salient backdrop of destroyed market value, we interpret the high survival rate of Dot Com firms to mean that many of the business ideas that flowered during the Dot Com era were basically sound. In other words, *good* ideas were oversold as *big* ideas. Most internet opportunities were of modest scale – often worth pursuing – but not usually worth taking public. Because most internet business concepts were not capable of productively employing tens of millions of dollars of venture capital does *not* mean they were bad ideas. It does, however, imply that for most of these companies, pursuing GBF was not a good strategic decision.

Conventional Wisdom about Get Big Fast in the Dot Com Era

Following Galbraith's definition of conventional wisdom – ideas and opinions that are generally accepted by the public as true – we argue that conventional wisdom c. 1996 – 2000 held that Get Big Fast was the preferred strategic choice to exploit the commercialization of the internet.³ GBF was based on the presumption that there was a significant first mover advantage (FMA) in internet markets. First movers, it was believed, would establish preferred strategic positions, preempt later entrants, and thereby secure above-average long-term returns. A necessary corollary of early entry was rapid

³ John K. Galbraith, *The Affluent Society* (New York, 1958).

expansion. Firms following a GBF strategy tried to grow aggressively and make substantial investments to both acquire customers and preempt competition.⁴

The intellectual basis for First Mover Advantage and the Get Big Fast strategy it supported had been developed within academic circles over many years. This literature sought to understand the conditions under which a preemption strategy was likely to succeed. Management scholars interpreted these theoretical findings for business, but the nuances of the intellectual debate did not carry over into the realm of business policy. In a study of the spread of the idea of FMA during the late 1990s, Lisa Bolton and Chip Heath found that FMA was interpreted much more positively in the business press than in the academic literature from which it emerged and dissenting views were rarely publicized.⁵ Moreover, their survey research among a sample of business decision-makers found a positive correlation between media exposure and the belief in strategic advantage from being a first mover, reinforcing the hypothesis that uncritical media coverage of FMA influenced managerial intent. In practical terms, managerial belief in FMA was epitomized by Toby Lenk, CEO of eToys.com in *Business Week*: “There is all this talk about [competitors] Toys 'R' Us and Wal-Mart, blah blah blah. We have first mover advantage, we have defined a new area on the Web for children. We are creating a new way of doing things. I am the grizzled veteran at this thing.”⁶

⁴ Allan Afuah and Christopher Tucci, *Internet Business Models and Strategies Text and Cases* (New York, 2002).

⁵ Lisa E. Bolton and Chip Heath, *Believing in First Mover Advantage*, Wharton School, Working Paper, 2004.

⁶ Heather Green *et al.*, “The Great Yuletide Shakeout,” *Business Week*, November 1, 1999: 28.

The irony of GBF was that it took time to grow quickly. By 1998, many e-commerce startups had raised venture capital to support rapid growth. In a *Newsweek* cover story entitled “Xmas.com,” Jeff Bezos declared “it's going to be a web Christmas.”⁷ Online sales for 1998 were predicted to reach \$2.3 billion by Jupiter Research, a number that was widely cited in the press. That Christmas, Dot Com firms met or exceeded top-line revenue expectations.⁸ But, there was confusion about revenue and “making money” in statements such as “the \$2.3 [billion] figure sent a message: Companies are making money out there in cyberspace. . .,” when, of course, companies were generating revenue but losing money.⁹ Importantly, profits were not used as an evaluation metric following the Christmas season of 1998. Rather, success was judged according to numbers of customers and gross revenue, criteria which established whether there was general demand for on-line purchasing services, not whether they were profitable. Rarely did articles in *Newsweek*, *U.S. News and World Report*, *Business Week* and similar magazines mention the costs of sales, profit margins, or any data related to the underlying economics of e-commerce during this period.

Firms were criticized, if at all, for operational failings. Websites crashed due to excess traffic, and orders failed to arrive by Christmas Eve, suggesting poor logistics and fulfillment. The press reported that the takeaway lessons from 1998 were about preparedness, fulfillment, and meeting consumer expectations. These behaviors were entirely consistent with pursuit of Get Big Fast. Profitability was not yet expected;

⁷ Steven Levy, “Xmas.com,” *Newsweek*, December 7, 1998: 50.

⁸ See, for example, Marilyn Geewax, “For Online Stores, It’s All Over But the Shipping and Counting,” *St. Louis Post-Dispatch*, December 19, 1998, Five Star Lift Edition.

⁹ Daniel Roth, “My, What Big Internet Numbers You Have!” *Fortune*, March 15, 1999: 114-15.

entrepreneurs could credibly claim that they needed more time, more money, and greater scale to overcome operational bumps in the road and fully implement GBF. Through 1999 these claims were largely unchallenged, in part because of fundamental uncertainty about the emerging industry. No one could know whether or not the GBF strategy would work until it was tested.¹⁰ Following Christmas 1998, the public discussion focused on the different components of implementing a GBF strategy. This discussion included such issues as the “necessity” of doubling and trebling server capacity to accommodate expected increases in web traffic, massive investments in advertising expenditures to establish market presence and increasing focus on customer service capabilities to, for instance, enable real-time online support, shorten average email response time, and ensure timely fulfillment.¹¹

The tenor of public discussion changed as Christmas season 1999 drew near. *Marketing News*, a trade publication, summarized the situation: “Retailers were caught off-guard by last year's online Christmas crush. Many experienced site outages and product shortages, while others failed to recognize the potential of e-commerce and didn't establish an online presence in time or at all.” This year, however, according to Jupiter Research analyst Ken Cassar, “They've had due warning. They have no excuses.”¹² Consistent with the predictions of FMA and GBF, anticipation of a shakeout in e-commerce grew. For example, Timothy M. Halley, a venture capitalist with Institutional

¹⁰ There are, of course, instances of nay-sayers speaking out before the crash in spring 2000; see, for instance, Anthony B. Perkins and Michael C. Perkins, *The Internet Bubble* (New York, 1999).

¹¹ Heather Green *et al.*, “The Great Yuletide Shakeout,” *Business Week*, November 1, 1999: 28; Susan Kuchinskas, “Shop Talk,” *Brandweek*, December 6, 1999: 64; Richard Karpinski, “IT Haunted By Ghost Of Christmas Past,” *Internet Week*, August 16, 1999: 1.

¹² Dana James, “Merr-E Christmas!” *Marketing News*, November 8, 1999: 1

Venture Partners, was quoted in the November 1, 1999 issue of *Business Week* as saying “We’re interested in industry leading dominant plays. Number one is great, number two is pretty good, and number three is why bother[.]” In the same article, Julie Wainwright, CEO of startup Pets.com of sock-puppet fame, predicted that “consumers are going to vote and leave a lot of businesses behind during the holidays. It’s going to be a make-it-or-break-it Christmas.” On December 28, 1999, Forrester Research Analyst Lisa Allen was quoted in the *San Francisco Chronicle* as saying “E-commerce is past the experimental stage, but it’s not completely shaken out yet.” Soon, Dot Com companies would no longer be able to attribute lack of profits to difficulties in implementing the GBF strategy. These quotes appear representative of sentiments communicated widely in the popular and trade press.¹³

Although many observers ascribed ill-intent to the companies that failed at Get Big Fast, a more charitable account of the financial boom and bust that accompanied the rapid commercialization of the internet in the 1990s attributes the rampant pursuit of GBF to the fundamental uncertainty about the advisability of pursuing GBF. The capital market was munificent because this uncertainty implied a high option value for internet securities.¹⁴ This, in turn, allowed companies to raise more capital by claiming that they needed to get even bigger and therefore grow even more before reaching profitability. According to industry reports, e-commerce revenues in Christmas 1999 doubled or even trebled their 1998 level, but by this time, the conventional wisdom was changing. Billions

¹³ See also Stephen Lacy, “E-Tailers Initial Public Offering Plans Hinge on 1999 Christmas Sales,” *Venture Capital Journal* 40 (January 2000): 5-6.

¹⁴ Lubos Pastor and Petro Veronesi, “Was there a Nasdaq bubble in the late 1990s?” *Journal of Financial Economics* (forthcoming).

of dollars had been staked in pursuit of GBF, and lack of sufficient scale could no longer explain away the sea of red ink reported by leading Dot Com companies. After several years of unprecedented capital market munificence, uncertainty about GBF was resolved. Hope for Get Big Fast gave way to a new certainty about the underlying realities of the technology: The option value of internet securities declined, and investors demanded results.

Moreover, this uncertainty, or at least its duration, was not entirely accidental. Consider again the case of Amazon: Amazon stands out as one of the few firms that successfully pursued Get Big Fast. We speculate that one compelling explanation of the success of Amazon draws upon the ways in which the firm cultivated public media to build reputation in the emerging field of e-commerce and buy time for Get Big Fast to work. In this respect, no company took greater advantage of the uncertainty surrounding e-commerce and the prevailing capital market munificence than Amazon under Jeff Bezos. Less than a year after the company website opened for business on July 16, 1995, the firm had already been featured on the cover of the *Wall Street Journal*. As detailed in a forthcoming comparative study by Violina Rindova and colleagues, Amazon's actions generated press coverage that attracted new customers and created opportunities for innovative strategic actions and additional public communications about these actions. These, in turn, allowed the firm to acquire more resources, intangible and real, which established the legitimacy of Get Big Fast and pushed back the day of reckoning on which investors would require Get Big Fast to yield tangible economic results. Bezos' ability to manage this complex system of strategic action and strategic communication set

the firm apart.¹⁵ The resulting virtuous cycle culminated in December 1999 when the Amazon founder was named Person of the Year by *Time* magazine. At age 35, Bezos was literally the poster-child for e-commerce.

But Amazon's ability to play the media had its limits and could not stave off the day of reckoning for GBF indefinitely. Despite the struggles, GBF was a successful survival strategy for Amazon. However, other Dot Com startups could not pull it off. By early March 2000, before the NASDAQ peaked signaling the end of the boom market for technology stocks in general, prices of the TheStreet.com's E-commerce index had already started to decline. By the end of the year, the specialized index would hover around 16, a decline of 87 percent from its peak. By comparison, when the NASDAQ bottomed out at 1,184.93 in September 2002, the larger market index was down *only* 76 percent from its March 2000 peak. Regardless of the more complicated underlying reality, "massive failure" had been chiseled onto the public tombstone of internet technology firms, especially the highly visible ones that pursued Get Big Fast.

Characterizing the Iceberg of Dot Com Venture Creation

With the preceding overview of the conventional wisdom supporting and later contradicting Get Big Fast in mind, we now characterize the entire population of firms founded to exploit the commercialization of the internet. To understand the logic of our analysis, imagine that the entire population of new venture creation activity from the Dot

¹⁵ Violina P. Rindova, Antoaneta P. Petkova and Suresh Kotha, "Standing Out: How New Firms In Emerging Markets Build Reputation in the Media," *Strategic Management Journal* (forthcoming).

Com era existed as a single iceberg. The emergence of GBF as the conventional wisdom, and perhaps, the media strategy of Amazon and similar companies, focused attention on the companies *above* the waterline, that is, on those that attracted the most resources, either private or public equity. These companies were visible because they managed, intentionally, to attract the attention of the business press.¹⁶ Beneath the waterline, out of public sight, the vast bulk of Dot Com companies remained invisible to the business press and therefore to the general public. The bursting of the financial bubble that began in 2000 and accelerated through 2001 was a phenomenon that disproportionately affected the firms that had sought and received media coverage, the part of the iceberg that was above water. If the bubble was indeed that, a bubble, it should only imply that there was a fundamental problem with those firms in the public eye – and say very little about the rest of the industry. Therefore, we ask what happened to the thousands of firms that never made it into the public eye?

Insert Figure 1 about here

To make statements about the entire population of Dot Com firms, we sought ways to characterize this group. Definitions of industries abound, but often take product markets as given. We chose to focus on a resource-based definition by which an industry is comprised of firms competing for the same resources. We began with a collection of

¹⁶ Violina Rindova, Timothy Pollock and Mathew Hayward, “Celebrity Firms: The Social Construction of Market Popularity,” *Academy of Management Review* 31, no. 1 (2006): 50-71.

business planning documents submitted to a single venture capital investor in the Northeast from 1998 to 2002. This collection is housed in the Business Plan Archive (BPA; www.businessplanarchive.org), a repository established in 2002 with the support of the Alfred P. Sloan Foundation to preserve business planning documents and other related digital ephemera from Dot Com Era technology companies.¹⁷ The sample that we analyzed consisted of 1,165 solicitations submitted to a single venture capital fund (hereafter, the Focal VC).¹⁸ Each solicitation in the sample represented a venture (extant or intended) that sought financial support from the Focal VC. We knew that every solicitation had been denied by the Focal VC, although some received venture funding from other investors. We wished to claim that these solicitations constituted a representative subset of the overall population of Dot Com firms. In the iceberg analogy, our sample represented an ice core of the berg. If it was a representative slice, we could use it as the basis for making general claims about the entire mass.

We used various methods to evaluate the representativeness of this sample. Ideally, we would have measured characteristics of the sample and compared it to similar characteristics of the general population. However, this approach was not possible for the very reason that we were interested in it: we did not know the characteristics of the entire

¹⁷ The Archive contains metadata on more than 3,500 companies assembled from various overlapping samples of Dot-Com Era firms.

¹⁸ We are careful to use the language “solicitation” as opposed to “firm” or “entrant” as many of the groups that solicited funding never moved beyond the planning stage of their ventures nor engaged in commercial activity, and hence should not be considered entrants. While the solicitations that we consider did not receive support from the Focal VC, a significant fraction of them did receive venture financing from its competitors. According to the terms under which the sample was given to the Business Plan Archive, we are not permitted to reveal the identity of the Focal VC. Researchers are encouraged to direct inquiries to the Business Plan Archive, www.businessplanarchive.org.

population. Our study was the first that claimed to be representative of the general population of Internet firms as opposed to being representative of only VC-backed or publicly traded firms. Where others had been content to limit themselves to studying the visible layers of the iceberg, we sought to assay the entire berg.

As a second-best method, we exploited the fact that a sizeable fraction of our sample received venture capital funding that was reported in a widely-used industry database, Venture Economics. We compared the venture-backed companies in our sample (VC-backed BPA firms) to the comparable population of all VC-backed companies. In this way, we would be able to determine if the *funded solicitations* in our sample, as judged by the venture community, were measurably different from the general population of *funded solicitations*.¹⁹

We compared the VC-backed firms in the BPA sample to the total population of venture-backed firms in the Venture Economics database along several dimensions. First, because the European venture capital market is qualitatively different from the American market, we only included US-based companies funded by US-based venture capital firms.²⁰ Second, we selected only *de novo* startups and excluded buyouts, roll-ups, recapitalizations, secondary purchases, IPOs, PIPEs, and debt financings. Third, we

¹⁹ Note: in this way, we are actually taking advantage of the decision making of the entire community of venture investors, not the potentially idiosyncratic decisions of the Focal VC. To assess the representative of the Focal VC, we undertook additional benchmarking reported in Brent D. Goldfarb, David A. Kirsch and Michael D. Pfarrer, "Searching for Ghosts: Business Survival, Unmeasured Entrepreneurial Activity, and Private Equity Investment in the Dot-Com Era," Robert H. Smith School Working Paper No. RHS 06-027, October 12, 2005, Available at SSRN: <http://ssrn.com/abstract=825687>.

²⁰ Steven N. Kaplan, Frederic Martel and Per Strömberg, "How Do Legal Differences and Learning Affect Financial Contracts?," *NBER Working Paper* 10097 (November 2003).

selected starting and ending dates that matched the time span of our sample. Fourth, we limited the reference sample to IT-related businesses.²¹

The results suggested that while the VC-backed BPA companies differed in some ways from the general population of VC-backed IT companies, they did so in ways that made our results easy to interpret. Controlling for founding date, the VC-backed BPA sample was biased towards firms founded during the height of the bubble. Moreover, these firms raised less money overall and less in their first successful funding rounds than did firms in the reference sample. Because funding levels are indications of the relative bargaining positions of venture capitalists and entrepreneurs, the lower initial valuations and subsequent funding levels for VC-backed BPA firms suggested that the firms that approached the Focal VC were lesser-quality firms.²² Finally, because the Focal VC was based on the east coast, VC-backed BPA firms were more likely to be located in Massachusetts, New York and Pennsylvania and less likely to be located in California than the average firm in the reference sample. In sum, these biases indicated that bubble-focused, low quality, east-coast firms were over-represented in the BPA sample, implying that a general survival estimate based on this sample could be reasonably interpreted as a lower bound. Returning again to the iceberg analogy, our ice core was slightly off center, but otherwise sound.

²¹ More than 95% of the VC-backed firms in the BPA were categorized by Venture Economics as IT-related, suggesting that our sample was accurately drawn from our study population. IT includes funds categorized by Venture Economics in one of the following categories: Communications and the Media, Computer Hardware, Computer Software and Services, Internet Specific and Semiconductors/other electronics.

²² Roman Inderst and Holger M. Mueller, "The Effect of Capital Market Characteristics on the Value of Start-Up Firms," *Journal of Financial Economics* 72, no. 2 (2004): 319-56.

What Happened?

Having established the representativeness of the BPA sample, we sought to use it as a point of reference to establish baseline estimates of technology entrepreneurship during the period: How many Dot Com ventures were created, and what became of them?

We employed a range of methods to evaluate the sensitivity of our estimates of venture creation activity. Our methods required strong assumptions; in a companion paper, we described our procedures in detail. For our current purposes, we take advantage of our finding that 13.2% of the solicitations recorded by the Focal VC received funding.²³ Assuming that this ratio holds across the entire population of venture-backed internet startups, for every company that received funding, 7.6 companies were seeking funding, but did not get it. Noting that there were 6,524 IT companies funded by venture capitalists between 1994 and 2002, we estimate that there were 49,582 startups seeking capital to exploit the commercialization of the internet during this period ($7.6 \times 6,524 = 49,582$).

What was the survival rate among these approximately 50,000 ventures? How should such an estimate be interpreted? The expected value of each business can be represented as the value of the business conditional on success, multiplied by the

²³ As noted in the companion paper (see note 19, above), we acquired two, related datasets from the Focal VC. One consists of a larger, low-information sample of which 15.3% received funding. Funding level in the second (high-information) sample, which serves as the principal basis of the analyses reported in the paper, is 11.1%. We use the arithmetic average of these two numbers (13.2%) in the exercise described in the text.

probability of that success. If this value is Π , the probability of success is p and the expected value conditional on success is V , then this value can be represented as follows:

$$\Pi = p \times V \quad (1)$$

While there is little debate that the bubble reflected an increase and subsequent decrease in Π , the source of this fluctuation, in terms of p and V , has different implications for the expected survival rate. Under one explanation, the boom and the bust reflected the emergence and subsequent disappearance of new business opportunities, a rise and subsequent decline of p . In this scenario, the “bust” represented the collective and cumulative recognition that these opportunities were at best, highly uncertain, if not evanescent. Over time, in this view, investors discovered that what they believed were *good* ideas – ideas with a high probability of success – were in fact *bad*, or low probability, ideas. The great explosion of new ventures formed during the run up to the collapse was thus unsustainable, and the spate of reported failures a consistent reaction to over-optimism and excess entry. If this explanation was correct, the failure rate of ventures formed during the Internet era should have exceeded typical rates of failure, especially as the period dragged on and the most profitable opportunities were exhausted.

A competing explanation attributes the “bust” phase of the Internet bubble to changes in financial markets, rather than product markets.²⁴ In Equation (1), this scenario would be represented by a rise and decline of V . In this case, the underlying opportunity

²⁴ Eli Ofek and Matthew Richardson, “The Valuation and Market Rationality of Internet Stock Prices,” *Oxford Review of Economic Policy*, 18 (2002): 265-287.

structure created by the advent of the commercial Internet was relatively unaffected by gyrations in capital markets. That is, there was a technology shock: the emergence of a commercial sector to exploit opportunities associated with a general purpose technology, the internet. The boom and bust reflected only “irrational exuberance” with respect to the valuation of new opportunities, rather than their viability. As a result of the bust, the perceived payoffs associated with new venture success declined from their previously unwarranted levels. In terms of Equation (1), investors believed they were investing in *big* ideas – ideas with a high expected value (V). The bust represented the discovery that the ideas were smaller than promised. Potential growth and value of a typical Internet startup was more limited than had been previously thought, but failure rates, under this scenario, would have been *lower* than during normal periods of entrepreneurship, consistent with the Schumpeterian hypothesis of secular technological change creating new entrepreneurial opportunities. Furthermore, if the bust was a reflection of a decline in business valuations as opposed to viability – driven, say, by the realization that GBF was not widely applicable – a focus on the visible (i.e., financial market) part of the phenomenon would have overestimated the magnitude of the decline. The conventional wisdom about GBF and the Dot Com bust described above is consistent with this view.

With this framework in mind, we researched the fate of the firms in the BPA sample. Of the 1,165 firms in the BPA sample, 214 were classified as “never entered.”²⁵ Our sample was therefore reduced to 951 entrants. We investigated the status of the startups in our sample in the spring of 2005. First, we checked the status of the firm on

²⁵ In the iceberg analogy, the non-entrants might be seen as loose ice around the bottom of the berg.

the Web. We determined whether the service described in the business plan was still available. To further investigate continuity of ownership, we compared management team profiles to those observed in the planning documents. If we suspected an acquisition, or if the service was no longer available, we consulted two additional sources, the Internet Archive and Lexis-Nexis. Using the “Wayback Machine,” an interface provided by the Internet Archive which provides snapshots of website changes over time, we determined the date of exit (if the firm exited). Where we identified web domains that had been acquired or developed by a new team in pursuit of a different opportunity, we inferred that the original business had failed. To test for the presence of phantom firms (or “the living dead”), we used several criteria. If it was clearly not possible to procure a service, we assumed that the business had failed (there were several examples where the website was “under construction” for several years). Also, websites commonly report when they were last updated, and the Internet Archive reports when the website last changed. If this date was before 2003, we suspected that the business had failed. When it was more recent than 2003, but the website was very unprofessional, we also suspected that the business had failed. We then tried to procure the services offered on the website (when appropriate) and/or contact the individuals who ran the website. Often, this latter strategy settled the issue. If it did not, and we were unable to procure a service, we categorized the business as failed. All in all, there were 40 firms with live websites that we categorized as failed using the above criteria.

For the sample, we report exit rates by year in Table 1. Few firms failed prior to 2000 when the failure rate was 0.06. The failure rate increased in 2001 to 0.15. In 2002,

2003 and 2004 the failure rates were 0.15, 0.13 and 0.19 respectively. The mean failure rate across all periods was 0.14. Because of the nature of our sample, we did not observe entry after 2002, and very little after 2001. In total, 48% of the entering firms survived through 2004.

Insert Table 1 about here

We compared our failure rates to other studies of industry survival. In a study of nearly 300,000 U.S. manufacturing firms over the 1963-1982 period, Timothy Dunne and colleagues found exit rates similar to ours. The 1963-1967 cohort of firms had a 42% cumulative exit rate after four years. Similarly, the five-year cohorts from 1967-1982 had exit rates of 58%, 64%, and 63%, respectively. Taking a finer-grained look at the plant data also shows comparable failure rates among firms that entered through the construction of new plants, a category arguably most comparable to our sample of new dotcom firms: From 1967-1982, the three five-year cohorts had cumulative exit rates of 64%, 57%, and 64%, all of which are somewhat higher than the five-year exit rate in our sample.²⁶ In a follow-up study of over 200,000 U.S. manufacturing plant entrants in two five-year cohorts, 1967-1972 and 1972-1977, Dunne *et al.* found that, on average, 40% of new plants (aged 1-5 years) had exited after 5 years. In other words, 60% of the new entrants in the manufacturing industry survived for at least five years, a number larger

²⁶ Timothy Dunne, Mark J. Roberts and Larry Samuelson, "Patterns of Firm Entry and Exit in U.S. Manufacturing Industries," *RAND Journal of Economics* 29, no. 4 (1988): 495-515.

than our 48%.²⁷ More recently, Rajshree Agarwal and David Audretsch examined over 3,400 firms in 33 U.S. manufacturing industries. The one-year average failure rate was 6%, identical to our exit rate for Dot Com firms. Over five years, manufacturing entrants exited at an average rate of 32%, compared to 52% for Dot Coms in our sample.²⁸ Finally, cumulative four-year exit rates of 3,169 Portuguese manufacturing firms that were founded in 1983 were 22%, 32%, 41%, and 48%.²⁹ These data compare favorably to the cumulative four-year failure rates of our sample reported in Table 1 (10%, 25%, 37%, and 44%).

The comparisons with results from classic studies of firm entry and exit suggest that the exit rate among the Dot Com Era firms in our sample was not extraordinary. However, cross-industry comparisons are necessarily suspect and may be confounded because the events we are comparing occurred in different time periods and Dot Com ventures in an emerging industry are not necessarily comparable to a broad cross-section of manufacturing plants. With these concerns in mind, we examined the survival rates of new firms in four emerging industries: automobiles, tires, TV and penicillin. Exit rates for autos from 1900-1909 were 15%, 21% during the 1910-1911 shakeout and 18% from 1910-1919. The exit rate from the tire industry from 1905-1920 was 10%, 30% during the shakeout in 1921, and 19% from 1922-1931. The exit rate from the television

²⁷ Timothy Dunne, Mark J. Roberts and Larry Samuelson, "The Growth And Failure Of U.S. Manufacturing Plants," *The Quarterly Journal of Economics* 104, no. 4 (November 1989): 671-98

²⁸ Rajshree Agarwal and David B. Audretsch, "Does Entry Size Matter? The Impact of the Life Cycle and Technology on Firm Survival," *Journal of Industrial Economics* 49, no. 1 (March 2001): 21-43.

²⁹ Jose Mata and Pedro Portugal, "Life Duration of New Firms," *Journal of Industrial Economics* 42, no. 3 (September 1994): 227-45.

(production) industry was 20% from 1948-1950 and 18% from 1951-1957. Finally, the exit rate from the penicillin industry was 5.6% from 1943-1954 and 6.1% from 1955-1978.³⁰

From these comparisons we can conclude two things. First, with the exception of televisions, the first shakeout for Dot Com firms occurred earlier (after 5 years) compared to other emerging industries. Second, with the qualification that we only observe survival through 2004 and with the exception of the penicillin industry, the average 14% exit rate among IT entrants is lower than other industries. Finally, we note that our failure estimates, especially those of 2003 and 2004, are biased upwards, as we do not observe entry after 2002. Histories of other emerging industries suggest that entry is a constant phenomenon.³¹ If we were to take into account this unobserved entry, the observed failure rates would be even lower.

Recalling the relationship set forth in Equation (1), the relatively high survival rate, p , is consistent with the arrival of a technological shock. The rise and fall of Π only reflected changes in the perceived value of Dot Com ventures (V). The spread of the commercial internet heralded a secular shift in the underlying opportunity structure, while public market gyrations represented an irrational increase and subsequent decrease in the perceived value of these opportunities, perhaps relating to evolving beliefs about the

³⁰ Kenneth Simons, "Shakeouts: Firm Survival and Technological Change in New Manufacturing Industries," PhD dissertation, Carnegie Mellon University, Department of Social & Decision Sciences, September 1995.

³¹ Simons, "Shakeouts," 1995.

viability of the GBF business strategy. The bust reflected a decrease in valuations to more realistic levels.

Conclusion

The closing years of the twentieth century produced a critical moment for entrepreneurial capitalism. Beginning in the mid-1990s and lasting through the stock market peak in 2000, this period saw unprecedented levels of technology entrepreneurship, venture capital investment, initial public offerings, and finally, wild price gyrations in public markets on which shares of these new companies were traded.

Returning to WrestlingGear.com, Scient and Amazon-- we suggest that another principal distinction between these three firms lay in the fact that a typical reader of the business press during the hey-day of the internet boom might have heard of Scient, and certainly heard of Amazon. But unless that person was also a wrestler or the parent or coach of a wrestler, s/he would have never known that WrestlingGear.com existed. This contrast applies more broadly: The Icarian arcs of a handful of high-flying internet companies occupied the bulk of public attention both on the way up and on the way down. In the public eye, these stories came to represent the totality of internet entrepreneurship in the 1990s, even as thousands of successful, if less spectacular, internet companies followed a more traditional growth trajectory, survived and even thrived.

This study has allowed us to see the ways in which WrestlingGear.com, Scient and Amazon were typical Dot Com startups. Scient typified the venture-backed gazelles that captured the public imagination and ultimately cost investors many billions of dollars. Today, its principal narrative of rise and fall is the prevailing story – the conventional wisdom – that most observers associate with the Dot Com Era. By contrast, WrestlingGear.com typified the counter-narrative, a traditional, behind-the-scenes story of entrepreneurial opportunity identification and exploitation that is remarkable for its normalcy. Amazon stands out as one of the few firms that successfully pursued Get Big Fast, but as we have seen, its success has obscured the many, viable and *small* internet businesses enabled by the internet.

Exploiting a unique database of Dot Com Era business planning documents, we have estimated the scale of entrepreneurial activity during the period. Approximately 50,000 startups were founded in the United States between 1998 and 2002 to exploit the commercialization of the Internet. The survival rate of Dot Com ventures founded during the height of the bubble in late 1998, 1999, and 2000 was a surprisingly high 48%, in line with if not higher than that observed in prior instances of industry emergence. To be clear, we do not suggest that one out of two Dot Com companies was successful, defined as meeting investor expectations, achieving sales and growth targets or delivering upon promises made in their original business plans. But they did not fail. Over time, census data and other studies may further refine this estimate, but for the moment, many Dot Com entrepreneurs can share the sentiment expressed in Mark Twain’s famous quip, “the report of my death was an exaggeration.”

Taken together, these findings — the concentration of resources in too few large ventures pursuing Get Big Fast, the normal to higher-than-normal survival rate, and the full extent of companies created — suggest that previous accounts of venture creation in the Dot Com Era have understated the extent of the phenomenon. Technology entrepreneurship in the Dot Com Era was more successful than people imagine today, and there was more of it than originally reported. To return to the formal relationship presented in Equation (1), the probability of success (p) for a given Dot Com Era venture was normal or slightly higher than normal, but the valuation associated with that outcome (V) was inflated by external gyrations in the financial markets. If the Dot Com Era had been the result of an irrational cascade of bad business ideas, the observed failure rate would have been higher, not lower than the average in other emerging industries. Regardless of the wild swings in the perceived value of new Internet ventures, their high survival rate underscores the idea that the ventures were created in response to real changes in the underlying opportunity landscape. Thus, in the mistaken pursuit of Get Big Fast, many *good* opportunities were oversold to investors and the public as *big* opportunities. As the bubble burst, valuations were brought into line with the realistic scale of the typical online venture, but the underlying, exogenous change in Schumpeterian opportunities persisted, enabling many *small* technology companies to survive and grow.

Figure 1: “Iceberg” of Dot Com Venture Creation.

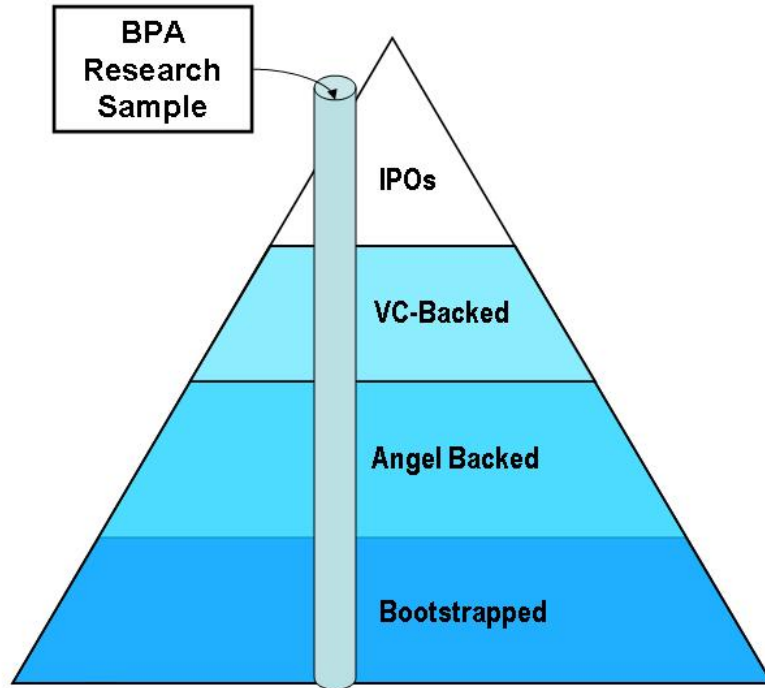


Figure 1: “Iceberg” of Dot Com Venture Creation. Visual representation of new venture creation during Dot Com era by type of funding showing study sample as “slice” or “core” of overall “iceberg.” As noted in text, media and initial scholarship focused on top two segments, those that were most likely to be pursuing Get Big Fast.

Year of exit	Year of entry						Cumulative exit rate (mean)	Total at period start	Exits	Exit Rate
	≤1996 (54)	1997 (52)	1998 (113)	1999 (217)	2000 (231)	2001 (109)				
1998	0	0	0					219	1	0.00
1999	0.00	0.00	0.02	0.00			0.00	433	3	0.01
2000	0.04	0.02	0.07	0.12	0.03		0.06	622	42	0.06
2001	0.13	0.19	0.21	0.25	0.22	0.09	0.20	619	112	0.15
2002	0.19	0.37	0.30	0.36	0.35	0.25	0.32	536	93	0.15
2003	0.24	0.38	0.35	0.43	0.48	0.39	0.41	467	70	0.13
2004	0.35	0.42	0.42	0.50	0.65	0.56	0.52	376	91	0.19
							Total:	788	412	0.14

Table 1: Cumulative exit rate by year-entry cohort. *Cumulative exit rate* is the weighted mean of the exit rates for each cohort and represents the cumulative exit rate of firms in the sample in the various years. *Total at period start* is the total number of firms in operation during that year. *Exits* is the number of firms that ceased operating during that year.