

VCs and Innovation

By Bart Stuck and Michael Weingarten

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In “Death of Innovation (Revisited)” and “Innovation and Profitability” (downloadable at www.signallake.com/publications), we concluded from an examination of 1300 high tech IPOs that the level of technological innovation is relatively low and has declined significantly since 1996, despite a increasing willingness by the market to value high-innovation companies at a premium. The issue is why.

In this article, we explore the extent to which the VC industry itself is playing an important role in driving the lack of innovation. That certainly is not the way that most VCs would picture themselves. VCs, after all, are supposed to be a major force behind innovation. Each VC fund invests in a whole range of companies, each of which (if successful) will pay back 10x in 5 years or less. With those types of returns (58% IRR), VCs can afford to take risks and still achieve their 20-year IRR average (16%). And compared to corporations, who generally focus on line extensions of existing technologies, VCs have everything to gain and nothing to lose by fostering innovation.

Yet despite that somewhat self-serving stereotype, we think that the reality of venture fund investing is more problematic than that. As VCs ourselves, we’ve had ample opportunity to see how a broad range of our colleagues make investment decisions. Based on that experience, we believe that a non-trivial part of the innovation problem is structural, not cyclical.

Here is our top 13 list of contributing factors:

1. **E-Commerce Bubble Returns:** When you can make triple digit returns on e-commerce plays in 6-18 months based on a bubble market ‘sell’ (typically that Company X would seize a nontrivial fraction of US GDP from brick and mortar incumbents), why invest in real technologies with non-trivial risk?
2. **Limited Time Horizon (A):** During the height of the Internet mania, VCs got used to putting together groups of 10-20 engineers with nifty Powerpoint decks, and then selling the companies to Lucent, Nortel, Cisco or PMC Sierra for \$250-500M, without even a working prototype. That’s not conducive to doing fundamental research.
3. **Limited Time Horizon (B):** Paradoxically, the post-2001 high tech depression has had a similar effect. There’s a lot less money out there to invest; even where VCs are sitting on large piles of cash, they are afraid to invest it in the current climate. As a result, startup companies rarely get more than \$5-10M in a single round, and the money generally is expected to last for two years. On \$200K-\$400K per month, you can’t do all that much real R&D (remember that all VC funded companies spend lots of money on non-engineers; i.e., the CEO, CFO, VP Sales, VP Business Development – we’ve always found it amusing that

startups with ten people need a CFO). And no one is going to fund a development project that takes 4-5 years with significant development risk.

4. **Limited Time Horizon (C):** Most VC funds have 6-7 year lives, with the investor expectation that things will be wound down by then. So how can a VC fund invest in something that might take longer than this to generate a payback?
5. **Limited Time Horizon (D):** In reality, the time horizon is even shorter than this. Most successful VC funds are fully invested in 3-4 years, at which point the VC general partner needs to raise the next fund. That's a lot easier to do if the fund valuation is showing upward valuations, and particularly if there have been some good liquidity events. It's a lot harder to do if you've invested in a bunch of long-term high-risk/high-reward deals, some of which have already folded and none of which are anywhere near liquid.
6. **Limited Time Horizon (E):** Clay Christensen's Innovator's Dilemma points out that in the early years of a disruptive technology, the new technology may be higher cost with lower functionality than the mature technology that it is seeking to supplant. If so, then VC-backed companies will not have the financial ability or interest in nurturing the new technology through the early years of the experience curve.
7. **Lemming Mentality:** VCs love to invest in deals that are fashionable. No one likes to invest in anything that seems particularly daring to investors. As a result, we see lots of otherwise indistinguishable deals for whatever is hot at the moment (right now, that's security and wi-fi, and perhaps nanotechnology).

The problem with this? If you are going to invest in fashionable companies, by definition, these are going to be companies that are variations on the same technology themes. Because of this, it is highly unlikely that these fashionable companies are going to be doing anything particularly revolutionary. The result? Along with Juniper, you get Foundry, Redback, Avici and Pluris – not earthshattering new technology like xerography.

[Paradoxically, investing in 'me-too' deals heighten the odds of failure. But the added comfort level can sometimes overwhelm rationality!]

8. **Business School Mentality:** Most VCs are MBAs, not engineers; and very few are visionaries. Many of them were investment bankers before they became VCs. They over-rely on market demand forecasts, and under-rely on vision and gut feeling. This stacks the decks against truly innovative ideas.

A good example of business-school-type thinking getting in the way of visionary thinking is the apocryphal story about the McKinsey study in the 1930s that looked at the market demand for xerography. McKinsey decided that xerography competed with carbon paper, and that the market was way too small. When you extrapolate off the past, you rarely hit mega home runs.

9. **Emphasis On Serial Entrepreneurs:** VCs love funding companies with a management team from other successful startups. The problem with this? First, it isn't necessarily clear that a successful first time entrepreneur was smart as opposed to lucky. Being at the right place at the right time does wonders for your apparent intelligence, and the bankruptcy courts are filled with entrepreneurs who made millions, then doubled down with large loans for Startup #2 secured by the assets of Success #1 -- only to find that they were lucky, not smart, the first time out.

Second, even assuming that the entrepreneur was smart as well as lucky, a serial entrepreneur by definition will be looking to do logical extensions of existing technologies. After all, those are the kinds of opportunities that they are being exposed to by their circle of friends. So while startup #2 may indeed be well-funded and even successful, they are unlikely to be truly disruptive technologies.

Thirdly, lightning typically doesn't strike twice in the same place. If we're looking for truly innovative ideas, we're probably not going to find it with someone who has already had their moment in the sun.

10. **Disdain For Pure Researchers:** If VCs love funding serial entrepreneurs, they hate funding pure researchers with no business expertise. So even if the pure researcher has invented the next xerography, they won't get serious attention from most VCs.
11. **Limited Technical Expertise:** Many VCs are populated with MBA types who understand business but don't really understand technology at an in-depth level. To the extent that true innovation involves complex technologies (some of which may be ready for prime time, some of which may not), the VCs are not well equipped to handle truly revolutionary technology.
12. **Bloated VC Fund Size:** The A-list VCs with a billion or more under management clearly have the wherewithal to fund larger innovation projects for longer periods of time. Unfortunately, the large sums of money appear to have pushed many of them in the direction of trying to find investments that can 'use' \$25-50M (or more) at a time. This inexorably makes these funds look less and less like early stage VCs, and more like LBOs. In the process, new innovation opportunities get short shrift, because they can't use up enough of the fund's capital for years to come.
13. **Corporate VCs:** The Innovator's Dilemma highlighted how normal corporate processes move R&D (and corporate VC funding) toward line extensions and ideas with synergy potential, rather than investing in disruptive technologies that cannibalize the base business. And the internal VC general partner equivalents typically have the same short-term oriented financial incentives as stand-alone VCs. So corporate VCs are not likely to be the source of innovation, either.

Conclusion

At a time when corporate and government high tech R&D funding is under pressure, the one important potential offset is venture funding. However, for the structural reasons outlined here, we observe that surprisingly little fundamental innovation is being supported by VCs. Instead, we're seeing the same type of incremental innovation highlighted in The Innovator's Dilemma, a behavior attributed in that book to established corporations who have a lot to lose from disruptive technologies. One would have thought that VCs, who have nothing to lose and a lot to gain, would be more supportive of new technology.

Is there a solution here? To a large extent, the first step in solving a problem is recognition that you have a problem. We hope that the VC industry thinks about what is going on (and not going on), and develop solutions.