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When Tailwinds Vanish

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18-23 minutes

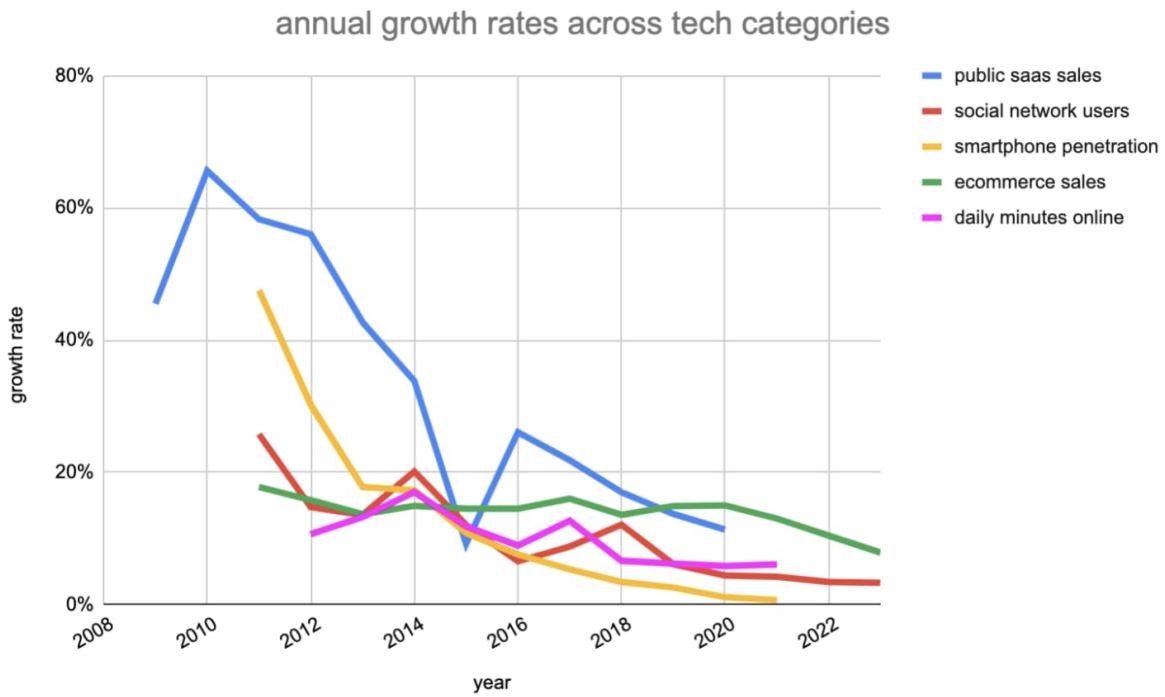
The Internet tailwinds that propelled Silicon Valley's meteoric growth for decades are stalling out. The ripple effects will jolt the tech industry.

In the late 1990s, the tailwinds began when Internet usage surged from a nerdy hobby on the West Coast to a global household necessity. Since then, the Internet has consumed an ever-increasing percentage of consumers' time and money. Smartphones and social networks became ubiquitous.

These tailwinds swept businesses, too. Enterprises SaaS spend has skyrocketed by more than an order of magnitude. A Cambrian Explosion of cloud infrastructure and business tools shattered capex barriers to starting companies.

As market tailwinds grew at 20%+ CAGR, the market dynamics shifted so quickly that incumbents couldn't react, leaving room for startups to emerge. When SaaS spend grew 50% per year, it was hard *not* to find green pastures as a new software startup. And consumers doubling their Internet spend and smartphone usage simultaneously every couple of years opened a massive window for new mobile applications.

The current exponential growth in VC fundraises, startup projections, and valuations for the past two decades all assume these tailwinds will continue in the 2020s. Many valuations are derived from expanding public multiples of next-twelve-month revenue, which in turn assume continued exponential market expansion. But if you look at these supposed tailwinds today, a gloomier picture appears: they are not exponential functions, but logistic functions with plateauing growth rates.

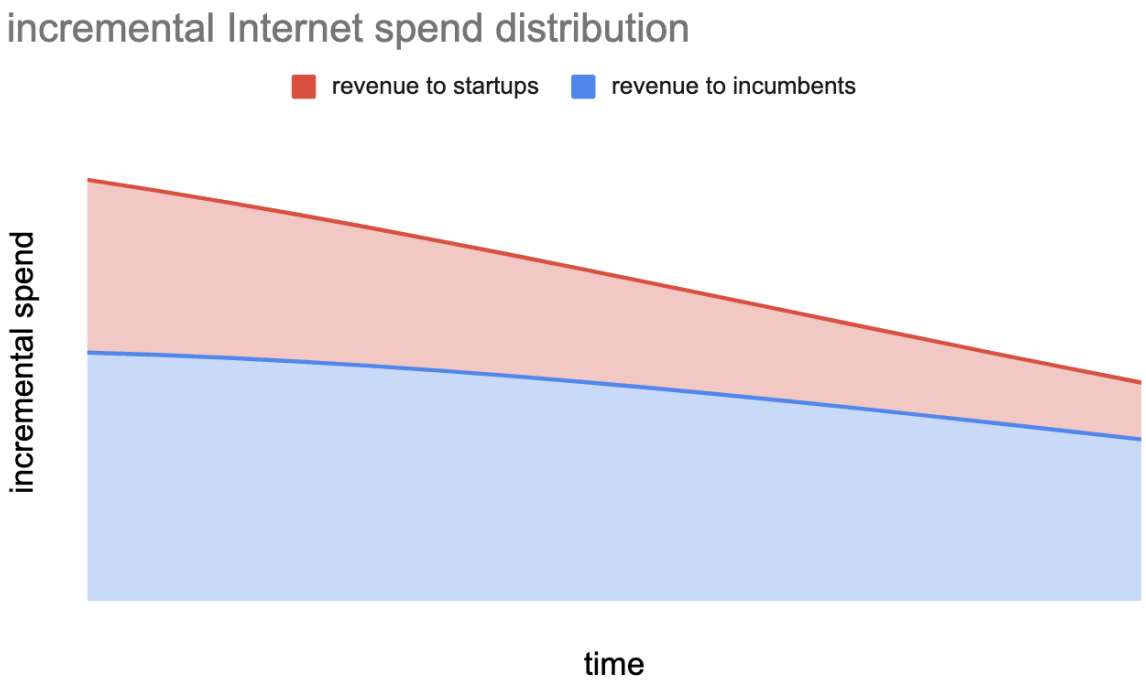


The vast majority of the country spends 6+ hours per day online, frequents social media, uses a smartphone, and shops online. This usage will undoubtedly continue to grow: e-commerce will continue taking over physical retail, and SaaS spend will continue replacing manual business processes.

But people can't spend more than 100% of their time or money on the Internet. As we approach full online penetration, new companies will need to steal revenue and users from Internet incumbents to grow.

Like any mature industry, Silicon Valley must battle to maintain growth in the face of immense economic gravity. For the first time in Internet history, startup growth will require a push from the company and not a pull from the market. Unlike the organic pull that drove many of the dotcom-era successes, today's Internet startups need to fight for growth by investing more heavily into sales, marketing, and operations.

Tapering tailwinds mean that incremental spend will slow. This empowers Internet incumbents to capture the remaining incremental spend with their existing product and go-to-market organizations, leaving Internet startups with fewer shots on goal to capture spend:



What are the practical consequences of the Internet's shift towards maturation? We can look through financial and cultural lenses to better understand the implications. We'll see an acceleration of zero-sum games between Internet startups and incumbents. A shift from R&D to SG&A will operationalize Silicon Valley, leaving room for new financial infrastructure. VCs will need to take risks on vision, not numbers. And the founders and operators of tomorrow won't look like those of the past 20 years.

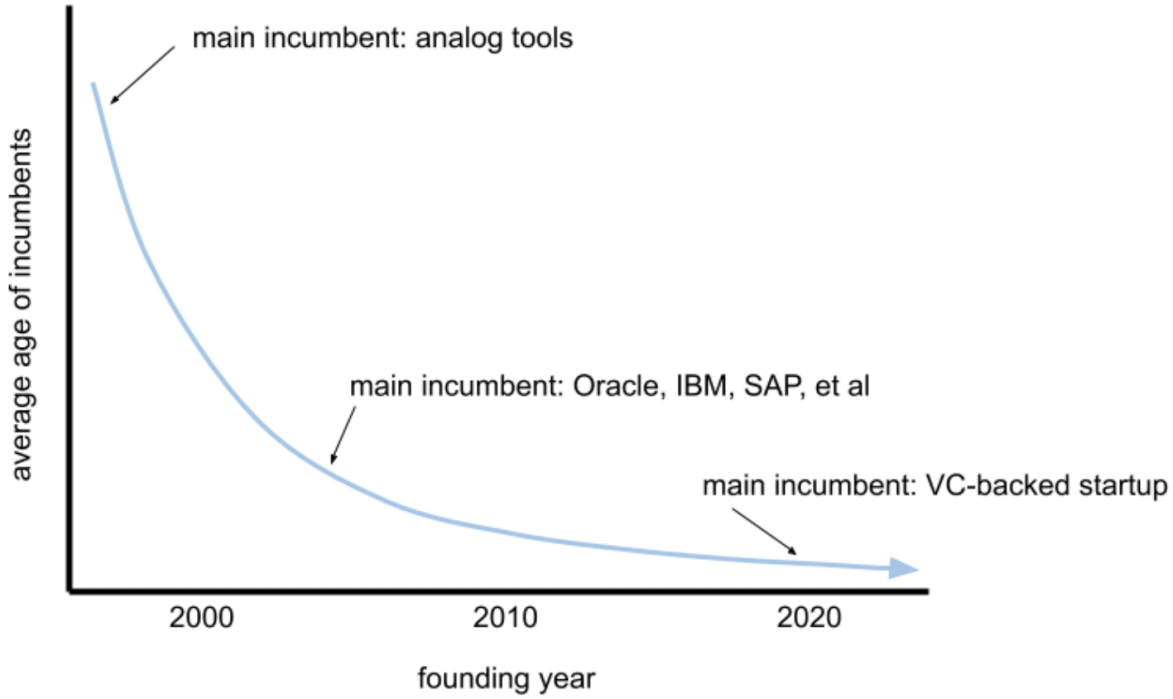
Competition: an acceleration of zero-sum games

We are building an exponential number of Internet companies that compete over ever-shrinking slices of consumer attention and enterprise spend, increasingly locked down by incumbents.

We can look beyond tech to guess what will happen.

How does a company like Boeing continue to grow its commercial airplane business? Sure, there's nominal annual growth in demand for airplanes, but the primary growth vectors are zero sum: stealing market share from Airbus, or acquiring smaller manufacturers. This will increasingly happen between Internet companies.

Software companies founded today are competing less with pen and paper than with other Internet-first incumbents. Put another way, as happens in every maturing industry before it, Internet company revenue will become zero-sum. As a corollary, the time between founding years of software startups and their competitive incumbents is shrinking:



When there are massive economies of scale – a marketplace or a social network, for example – the blitzscaling approach works well. The first to critical mass wins.

Does this strategy still work today?

Scale advantages still exist at the corporate level: brand accumulation, supplier purchasing power, and cheaper access to capital. But today, true network effects-driven business models are rarer than ever. Simultaneously, there are diseconomies of scale in the tech ecosystem: fiercer competition for talent, skyrocketing real estate prices, and sophisticated incumbents driving up customer acquisition costs.

The blitzscaling playbook is more fitting as a reflection on the past two decades than as a prescription for the 2020s. When the ecosystem-level diseconomies rival the company-level economies of scale – "first to scale" may become "first to fail". Unit economics matter more than ever. Carefully measured growth will win.

Hiring: a shift from R&D to SG&A

Internet startups will face new tactical realities as a result of zero-sum competition. As we experience CAC inflation across industries due to more people bidding on static ad inventory, Internet startups need to invest more into SG&A than ever to maintain growth.

To run a thought exercise: what would happen if you needed to reduce your startup's operating expenses by 50%? Many startups are running this unfortunate thought exercise right now.

If Google were to fire half of its employees, there would be large reorgs and engineers would be stretched thin, but the financial outlook would be fine. Its core business – search (supply) and ads (demand) – is an autonomous machine with limited human capital requirements. I would expect a diminutive decline in revenue, and even a large increase in net income.

As an enterprise software company, on the other hand, your growth would slow as you fire AEs, and churn would increase as you shrink your customer success team.

As an atoms-heavy marketplace, your local operations and customer support teams would fall apart, and supply acquisition would stall out.

Internet companies have spent the last 20 years capturing opportunities with the highest margins, lowest operational complexity, and strongest market pull: search, social networks, CRMs, ecommerce.

As the Internet growth tailwinds subside, what's left? Harder problems. Today, startups tend to focus on problem spaces where there is higher operational and go-to-market complexity. This could mean

companies with an atoms component, or with a tougher sales process, perhaps stemming from a weaker market need or more robust competition. This often means higher marginal costs to sell and provide services. More software sales reps chasing the same customers, and more ad dollars chasing the same clicks, means more expensive customer acquisition – it's a simple matter of supply and demand. This translates into higher investments into SG&A, and eventually lower gross margins.

To pose the inverse of the opex reduction question: if you had an extra million dollars for your startup, where would you spend it?

In the immature Internet era, a consumer Internet company would likely invest this money into R&D by hiring engineers, product managers, or designers. Consumer Internet companies famously grew without needing employees – Instagram grew to 30 million users with 13 employees in 15 months, and Whatsapp had 500 million users with 50 employees just 5 years after founding. They hired people to support their growing user base after achieving scale.

The dominant startups today tell a different story. As a marketplace with a physical component – say, food delivery or ridesharing – you might spend this money on local ops and supply acquisition. As a SaaS company, you'd spend an extra million to hire more sales reps or run a marketing campaign. These SG&A investments are a prerequisite to drive business growth. Relative to the R&D-driven growth of early Internet companies, SG&A will become the primary growth vector in the 2020s.

Growth: higher SG&A spend means more predictable growth

There is a silver lining: as Internet companies invest more into SG&A, they'll have a clearer understanding of their growth levers.

As a founder, there's an important question of which employees are critical to growing the core business.

During the consumer Internet era, an investment into R&D helped move the product forward, but not typically in a financially quantifiable way. The ROI on the marginal hire was positive, but relatively uncertain: you wouldn't hire an engineer for $80k per year expecting them to generate six figures of enterprise value annually, but they would develop features to retain and grow your user base.

Investing in R&D was king for the early Internet era, but it has diminishing marginal returns – everyone has read cautionary tales around technical debt and engineering coordination problems. At scale, many consumer Internet companies prefer holding cash to reinvesting into R&D.

Paul Graham tweeted that "a visitor who walks around and is impressed by the magnitude of your operation is implicitly saying "Did it really take all these people to make that crappy product?"" But this observation is fixated on a world where R&D dominated Internet startup headcount, and small teams were preferable.

For SG&A-heavy companies that dominate today's startup ecosystem, headcount is now more causal than resultative of growth. While consumer internet companies scaled up opex after scaling user growth, labor-driven marketplaces and enterprise software companies require heavy SG&A investments to drive growth:

- **Consumer Internet**: *user growth → fundraise → invest into R&D*
- **Labor-driven marketplaces**: *fundraise → invest into SG&A → user growth*
- **Enterprise software**: *fundraise → invest into SG&A → user growth*

This causal relationship may seem counterintuitive, given there's more tooling than ever making it easier to start a company. Shouldn't we soon have a one-employee unicorn? But this deflationary pressure on startup capex is offset by the inflation in opex: labor, operational, and distribution costs. As startup success becomes zero-sum, growth will be more expensive – both in terms of financial and human capital.

In the past five years, startup spend ROI has become more predictable as it shifts from R&D to SG&A: in contrast to an engineer, a salesperson or operations leader can drive a quantifiable amount of value to your top line (growing revenue) or bottom line (increasing LTV). But as with most investments with predictable yields, it will commoditize – companies will grow spend as fast as possible while generating acceptable yields. Like any low-yield business, companies will need to compensate for these yields in volume – investing more dollars to generate the same cash flows.

This creates an increasing need for software to operationalize growth. As growth becomes the key bottleneck of Silicon Valley Internet companies, software that measures and unlocks growth will become correspondingly desirable. This may take the form of cross-functional growth software – an orchestration layer between sales, marketing, finance, and operations – helping to quantify ROI tradeoffs across divisions to help founders make strategic tradeoffs.

Financial operationalization: Sand Hill Sachs

As a prospective founder, don't be scared off by the increasingly zero-sum nature of Silicon Valley. This dynamic presents an opportunity to build the financial layer of tech, similar to what Goldman Sachs did for the rest of corporate America.

What is Goldman Sachs? Goldman is a financial layer on top of corporate America, helping to fuel its growth. They offer services ranging from M&A advice, IPO underwriting, private equity, debt investing, prime brokerage, private wealth management, market making, and investment research.

As the ROI of SG&A spend becomes more predictable, a non-VC financial layer will emerge within Silicon Valley, similarly helping to fuel its growth. This capital layer can help partially compensate for the slowing market-based growth tailwinds. This suite of services will benefit from a tech-specific approach: real-time debt offerings based on operating KPIs, securitization of software ARR, and retail investor-facing SaaS bonds.

Today, many startups interface with banks only as they near IPO. In the 2020s, tech advisory services will emerge to help growth-stage startups achieve their financial goals – divorcing companies' financial strategies from their operational strategies.

Why can't a traditional bank do this themselves? 1) They don't understand how to underwrite using tech industry metrics (ACVs, churn, LTV, engagement, et al.), and 2) they don't have the tech DNA to underwrite programmatically, which Sand Hill Sachs will have. This may be a new company, an existing fintech player with distribution in tech, a VC firm, or a bank. My bet would be on a new startup or a late-stage fintech company.

As Alex Danco highlighted in his recent article Debt is Coming, it is clear that recurring revenue securitization – the notion of selling your future ARR bookings at a discount – is the future. The biggest barrier to adoption is cultural: the stigma that "venture debt is like a delicious sandwich that only costs ten cents, but occasionally explodes in your face" is deeply tied to the predatory reputation of old-school venture debt lenders. Companies like Pipe and Clearbanc are already starting to destigmatize securitization, and it will only become more culturally normalized in the coming years.

Once this securitization accelerates, ARR securities will become the next bond-like asset class for both institutions and individuals – irresponsible *not* to have some in your portfolio, as a fixed income product and a balance against equities. And who will make this market? Sand Hill Sachs.

VCs: take risk on vision, not on numbers

Once Sand Hill Sachs exists, it will become clear that VC dollars should be reserved for R&D, not S&M or G&A.

A large portion of the collective effort of VCs is focused on late-stage software financings. This certainly will not go away, but companies with predictable metrics will have access to alternative financing options like debt and securitization products. VCs will increasingly need to distinguish between S&M, G&A, and R&D risk.

As a VC, the question becomes: how can you generate alpha through the financial commoditization of Silicon Valley? Thankfully for my industry, there are several risks VCs will continue to be uniquely good at taking:

- **R&D risk** – can this technology be built?
- **Founder risk** – can this team build it?
- **Vision risk** – can this idea become huge?
- **Macro risk** – will this startup win in 2030's political, economic, and competitive climate?

VCs will be rewarded for investing in companies with limited empirical data or historical precedent – which, after all, is the foundational idea behind venture capital. Idiosyncratic companies with limited tech precedent will be relatively immune to this shift (defense or health insurance, e.g.), as will those with limited empirical data (e.g. biotech or pre-launch products).

When late-stage investing shifts away from primary capital-based fundraising, secondary investments will become important to generate VC returns for growth investors. Carta and Forge are uniquely well-positioned for this shift as market makers, as are funds registered as RIAs to capitalize on secondary opportunities.

Late-stage VCs often lament that other funds are willing to underwrite to a lower multiple – and thus give higher valuations to companies. If the growth-stage multiple expectations continue to decline, it will only accelerate the relative attractiveness of late-stage debt, both for founders (no dilution) and investors (guaranteed IRR).

Founders: a new playbook

In the late 1990s, the prototypical startup founding team was two engineers working out of a garage, seared into our brains by the successes of garage startups like HP, Apple, and Amazon. This formula worked because you needed computer nerds to reimagine industries for the online world, as far away from industry experts as possible.

Today, the Internet blueprint has been laid. If new Internet startups are increasingly competing with Internet-first incumbents, what would a promising Internet startup founder look like today? There will certainly always be value in fresh perspectives from industry outsiders. But on a relative basis, founders with 1) experience in growing online businesses, or 2) pre-existing distribution advantages will have a premium that didn't exist before.

For startups taking R&D risk in new technological areas, the founding team may look like something we can't pattern match to historical successes. Maybe it's a scientist in his garage who escaped the tendrils of academia. Or your first hire for the founding team is no longer your college roommate, but an expert in your startup's industry.

Career paths & education: will finance sneak into STEM?

In the 1990s and 2000s, computer science was the dominant major by almost any metric: financial success, career impact, social capital. Eric Schmidt, Meg Whitman, Marc Andreessen, Marissa Mayer, Mark Zuckerberg – all STEM majors.

In a maturing Silicon Valley, what career paths will be rewarded?

We may see a reacceleration in fields like biology or mechanical engineering as we build platforms beyond the Internet.

In the Internet context, as growth is in short supply, the labor market seems to be providing. We are already seeing growth sneak into job titles: growth engineers, growth teams, growth marketing.

Perhaps ahead of the curve, many of the CS majors at Stanford no longer want to be engineers. Being a product manager or chief of staff is the new post-college status symbol. I think there is an organizational component to this: as there's a shift towards SG&A spend in Silicon Valley, there's an increased premium on cross-functional roles (or conversely, a lower premium on pure R&D roles).

A rise in the importance of S&M roles may lead to a revival of econ and statistics in undergrad. Since 2008, there has been a nearly 50% decline in Stanford economics graduates – which you can think of as a "pre-finance" degree – largely driven by a declining appeal of investment banking, and an increasing appeal of computer science. As Silicon Valley builds out its financial infrastructure to maintain growth, will we see a "CS + finance" hybrid major appear?

Conclusion

The Internet's maturation will have ripple effects across every financial and cultural aspect of the technology industry. There certainly will be $10 billion dollar companies started within segments slow to adopt technology: legal tech, construction, agriculture, and mining are all prime candidates for massive new technology entrants. But new $100 billion dollar outcomes are less likely to come from pure Internet companies.

The Silicon Valley of tomorrow will not look like that of today – success stories rarely repeat themselves – but new Internet opportunities certainly aren't going away. Quite the opposite: recognizing where we are in the Internet adoption curve clarifies the opportunities in front of us. Founders may seize this moment to build new tools to better understand operational investments, create the financial layer of the Internet, or look beyond the Internet to build new platforms in biotech or energy.

Thanks to Brandon Camhi, Sam Wolfe, Melisa Tokmak, Harry Elliott, Michael Solana, Everett Randle, Anna-sofia Lesiv, Lisa Wehden, Gabriel Bianconi, and Lee Edwards for their feedback.