



REVENUE GROWTH STUDY

HOCKEY STICK RESEARCH STUDY OF 172 SUCCESSFUL START-UPS

By Bobby Martin

The Hockey Stick Principles

ABOUT THE AUTHOR

Bobby Martin believes that too many start-up founders pivot too early, quit too soon, and expect rapid takeoff.

Through his experience of starting and selling First Research (a leader in sales intelligence) for \$26 Million to Fortune 500 firm, Dun & Bradstreet, he's learned first-hand the challenges and solutions at each stage of entrepreneurial growth. In addition to his book *The Hockey Stick Principles*, Bobby's current adventure is as chairman and co-founder of Vertical IQ, a leading provider of sales research insight for banks. Bobby is an angel investor and serves as an active board member with several innovative start-ups, including Local Eye Site, Boardroom Insiders, MyLifeSite, Sageworks, Vital Plan, and etailinsights. While he is a national speaker, he is still a hometown guy and focuses most of his investments in North Carolina where he has lived and worked. He graduated from Appalachian State University, is married, has two children, and is an avid tennis player.





REVENUE GROWTH STUDY

The Hockey Stick Research Project is a quantitative analysis of 172 successful start-ups of all types. The study investigates questions such as: How much revenue does the typical successful start-up produce each year after inception? How fast does its revenue grow? How much investment do they raise to get started? How much faster do firms that acquire venture capital grow versus ones that do not? Is there great variance in revenue between industries or target markets? Do industry experts make better founders than outsiders? What percentage of start-ups have co-founders? And others.

The results help founders gauge their own progress with regards to revenue expectations, fundraising, taking on cofounders, and what type of business to start. For example, if you produce zero revenue the first year, is that ok? If you raise lots of money to ramp up faster, how much will that impact revenue? Of course, all start-ups are unique, but the benchmarks are still useful. This study helps founders know more about what to expect before starting.

The companies used in the study were chosen using a “convenient” sample as opposed to a “random” sample. I purposely sought out start-ups from a wide range of industries, revenues, founder types, and products. My main criteria for being included were 1.) the start-up had reached at least \$1 million in revenue by their seventh year and 2.) they were innovative. While 172 companies are in the study, due to varying availability of data, the sample size in each dataset does vary. A vast majority of the companies were started between 2002 and 2007. A sample of the companies included in this study and their first seven years of revenue can be viewed on [The Hockey Stick Principles’ website](#).

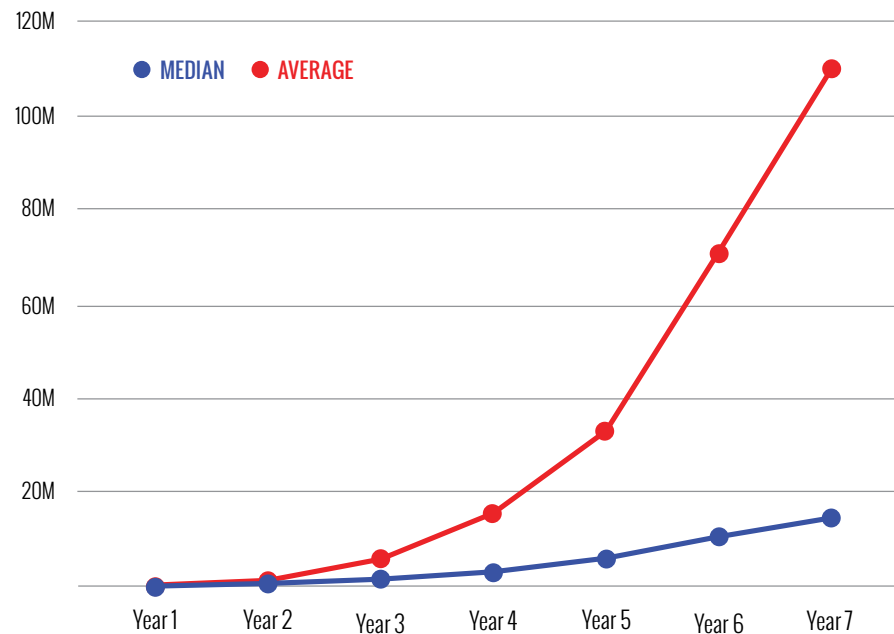
REVENUE GROWTH STUDY

SUCCESSFUL, INNOVATIVE COMPANIES RAMP UP REVENUE SLOWLY

Only 36 of 55 (65%) companies produced revenue during their first calendar year. Only 25 of the 55 (45%) produced more than \$100,000, and only five of the 55 (9%) produced more than \$500,000. It takes a long time to build revenue. Video camera maker GoPro produced \$800,000 its fourth year in business versus \$1.6 billion in 2015, its eleventh year. Professional social media company LinkedIn produced \$1.1 million during its third year in business versus \$3.0 billion in 2015, its thirteenth year. Start-ups pursuing “niche” markets ramped up revenue particularly slowly. For example, email marketing company Bronto Software produced \$17,000 its first year, 1999, \$170,000 its second year, and \$700,000 its third year. By 2015 its annual revenue run rate was estimated at \$40 million, the year it was sold to Netsuite for \$200 million.

Here are the revenue patterns for the start-ups in the study.

REVENUE FOR SUCCESSFUL START-UPS



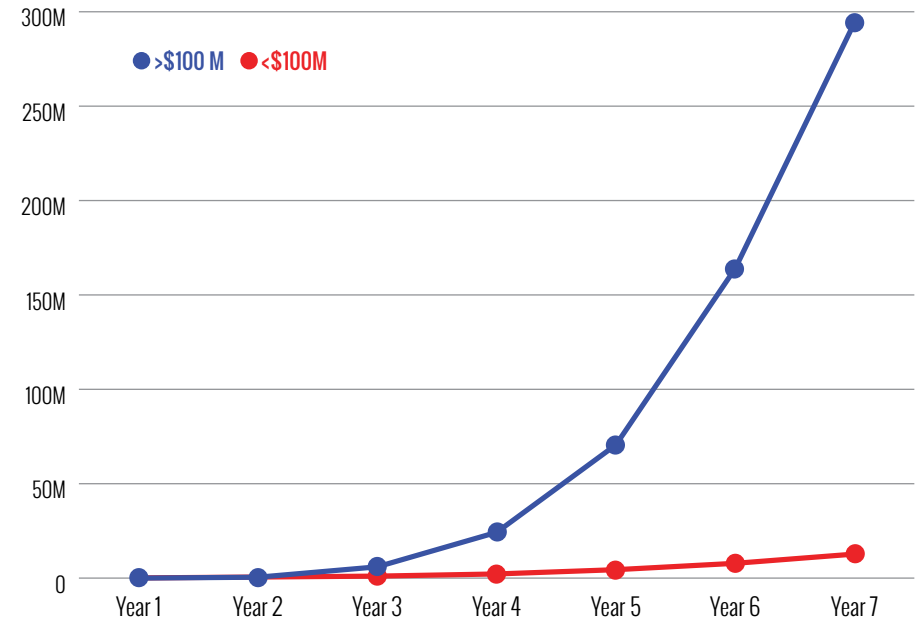
Revenue	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Median*	0	555,687	1,464,993	3,035,604	5,927,600	10,496,320	14,500,000
Average*	212,871	1,209,061	5,727,131	15,510,131	32,993,876	71,054,246	109,966,594

*Average revenue is significantly greater than median revenue because a few start-ups were wildly successful, influencing the average. For example, Facebook produced \$1.8 billion in its seventh year and Amazon produced \$147 million its fourth year.

REVENUE GROWTH STUDY

During their first two years, even start-ups that became huge companies (revenues of \$100 million+) recorded similar revenue as opposed to start-ups that became small firms (revenues less than \$100 million). The second year median revenue for those that grew to more than \$100 million was \$471,909 versus \$555,687 for those less than \$100 million. For example, during their second years, Amazon and Netflix produced \$511,000 and \$1,339,000, respectively. Yet, during their second year, relatively small firm First Research, which sells industry profiles, and iContact, which sells email marketing software, produced \$228,000 and \$296,000 respectively. The point here is that early adopters are difficult to find no matter how big the product idea is. So two years in, you may or may not know the outcome of your idea.

TAKEOFF TAKES TIME



Revenue	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
>\$100M	-	471,909	5,969,324	24,240,161	70,612,497	164,106,592	294,489,459
<\$100M	105,867	555,687	1,051,423	2,193,876	4,460,094	7,833,716	12,733,786

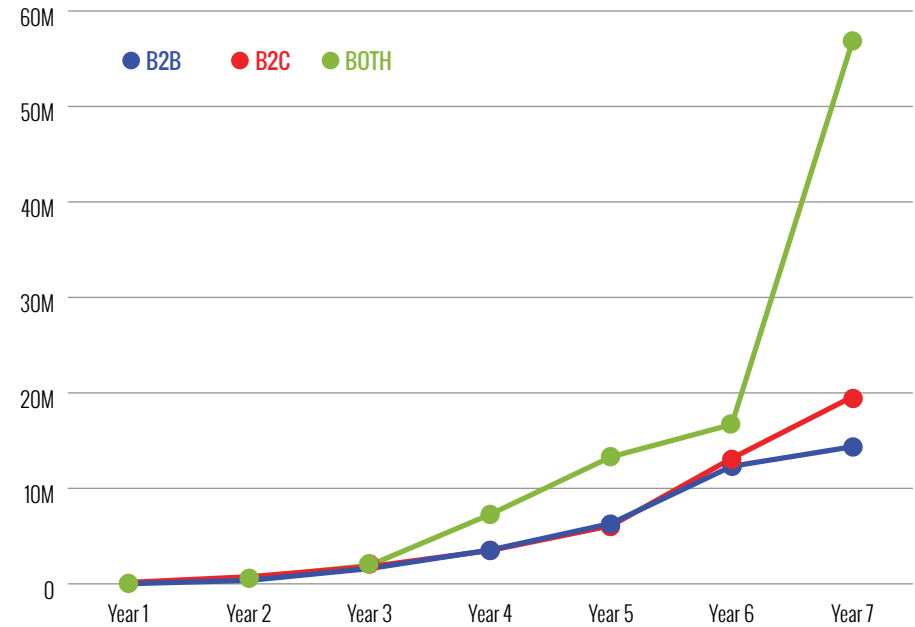
SELLING TO BOTH CONSUMERS AND BUSINESSES GENERATED THE BIGGEST REVENUE

Is it best to start a company that sells to businesses, consumers, or both? The 24 start-ups that sold to both businesses and consumers grew significantly larger than the 114 start-ups that pursued on one or the other.

Examples of B2B start-ups in the study include email marketing firm iContact, online loan broker LendingTree, financial software firm Sageworks, and sales intelligence firm Lattice Engines. Examples of B2C start-ups in the study are Yeti Coolers, medical device firm Backjoy, and food manufacturer Chobani Yogurt. Examples of companies in the study that pursue both businesses and consumers are Facebook, Indie film distributor Gravitass Ventures, and Dropbox.

During the first year, start-ups such as Yeti Coolers and Chobani Yogurt, who pursued consumers, got off to the fastest start, having generated median revenue of \$145,537. This is in contrast to \$8,769 for those pursuing businesses such as sales intelligence firm Lattice Engines and financial software firm Sageworks. I would assume that businesses require longer sales cycles because they purchase with greater analysis, require more layers to make decisions, and are complexity organizations.

MEDIAN REVENUES



Segment	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
B2B	8,769	358,854	1,601,559	3,545,272	6,321,832	12,314,217	14,358,783
B2C	145,537	736,949	1,795,589	3,496,930	6,085,665	13,139,542	19,593,131
Both	91,453	624,049	1,934,547	7,279,042	13,301,669	16,689,709	56,820,805

BONUS FIND #1

The average time founders “tinkered” with their ideas before quitting their day jobs, investing substantial money, and starting their start-up was 12 months. The average amount invested during the “tinkering stage” was \$5,880.

Third year revenue for businesses that pursued consumers (B2C), businesses that pursued businesses (B2B), and businesses that pursued both all tracked about the same, but by the fourth year the businesses that pursue both began to pull away by showing more than \$7 million in revenue versus only about \$3.5 million for B2B and B2C firms. By year seven, businesses that pursued both were way ahead partly because of the huge success in having two revenue streams as in the case of cloud storage company Dropbox.

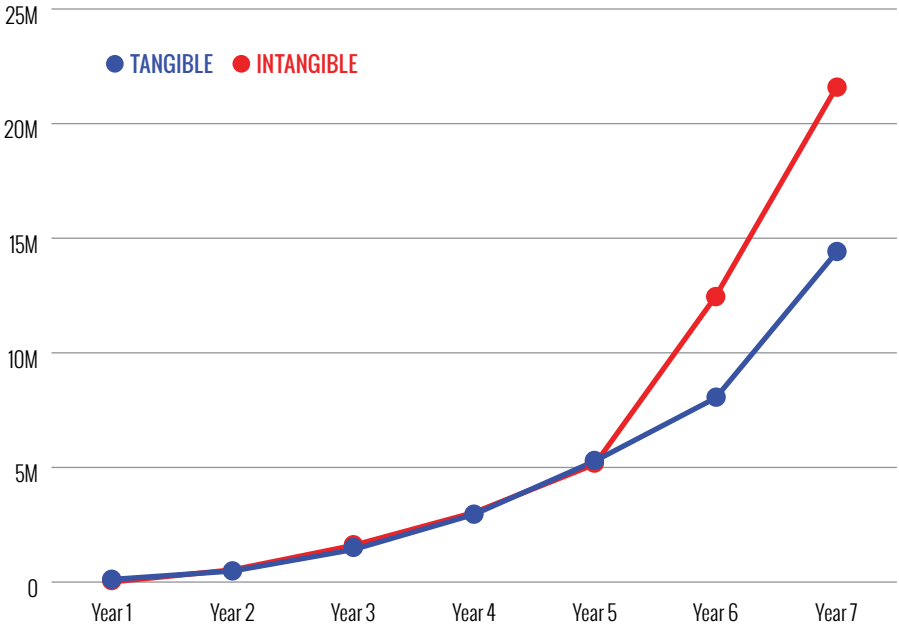
INTANGIBLE PRODUCTS GENERATED MORE REVENUE THAN TANGIBLE ONES

By their seventh year, intangible products defined as software and online platforms (66 companies) grew revenue 53% larger than tangible products defined as products that can be held or touched such as clothing, food, or new types of scooters (69 companies). Intangible products also scored more big successes. By their seventh year, nine start-ups with intangible products grew larger than \$100 million versus six with tangible products. Three start-ups with intangible firms grew larger than \$500 million, and two of those, Google and Facebook grew to more than \$1 billion. Only two start-ups with tangible products grew to \$500 million, and neither grew to a billion.

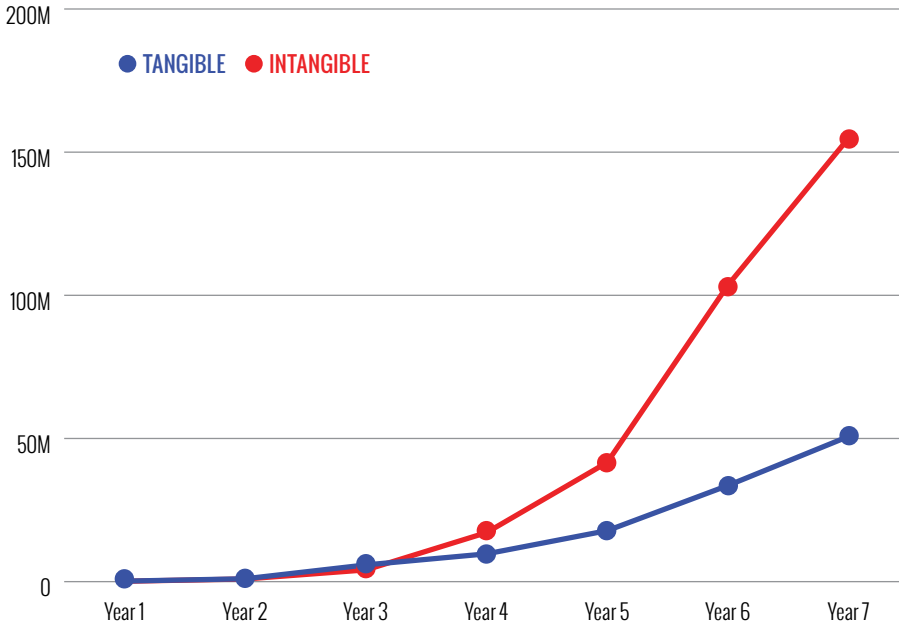
REVENUE GROWTH STUDY

Here were their median and average revenues:

MEDIAN REVENUES



AVERAGE REVENUES



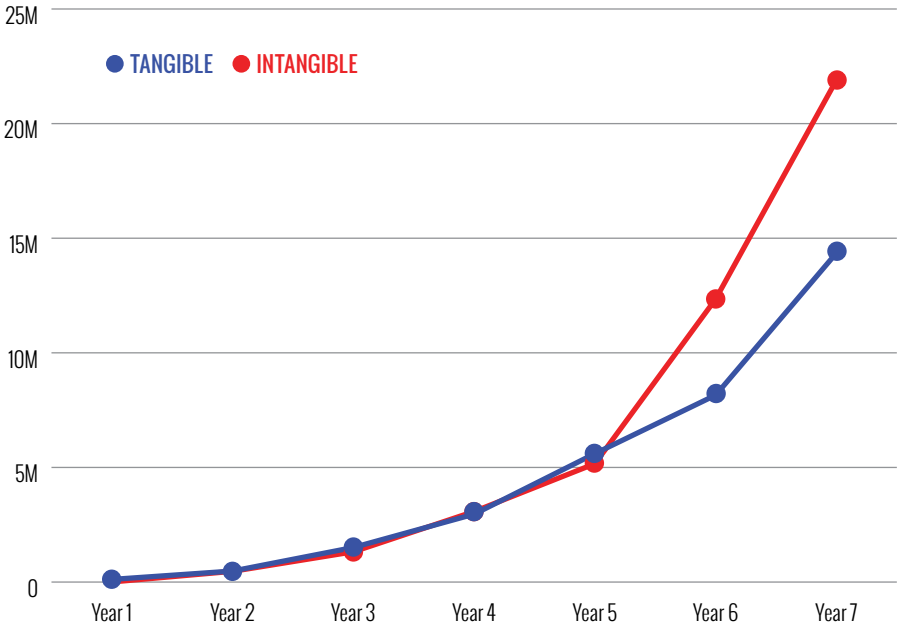
Segment	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Tangible	115,837	481,022	1,417,570	2,952,815	5,281,345	8,032,896	14,391,623
Intangible	4,596	533,733	1,601,559	3,035,604	5,142,054	12,468,383	21,591,111

Segment	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Tangible	115,837	481,022	1,417,570	2,952,815	5,281,345	8,032,896	14,391,623
Intangible	4,596	533,733	1,601,559	3,035,604	5,142,054	12,468,383	21,591,111

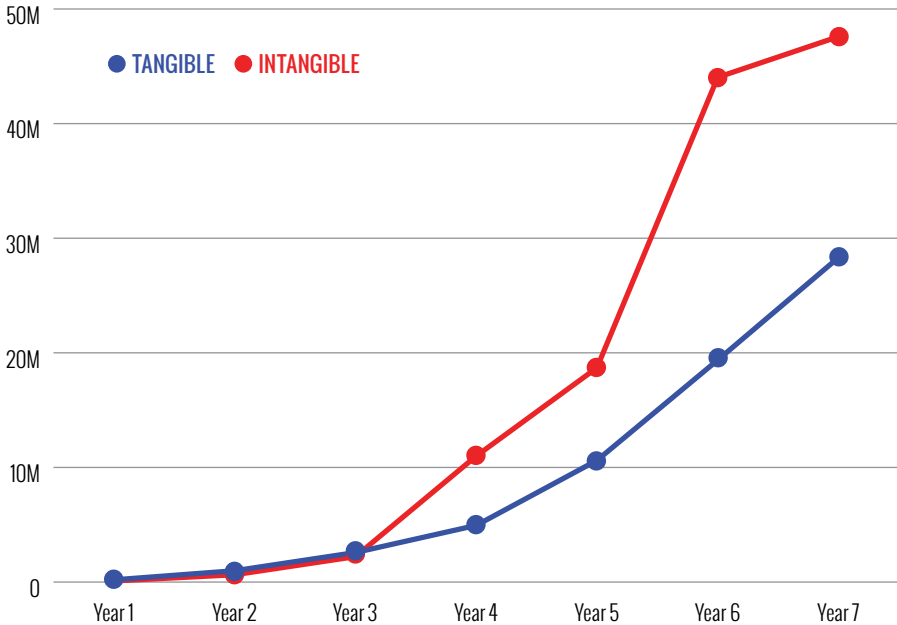
REVENUE GROWTH STUDY

When I removed the start-ups that grew to more than \$500 million, here were the results:

MEDIAN REVENUES



AVERAGE REVENUES



Segment	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Tangible	115,837	481,022	1,508,652	2,962,014	5,604,472	8,156,418	14,358,783
Intangible	4,596	467,672	1,319,726	3,078,740	5,164,314	12,350,371	21,901,688

Segment	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Tangible	193,893	988,884	2,575,700	4,941,699	10,614,873	19,369,248	28,312,450
Intangible	92,585	638,430	2,215,472	10,991,195	18,697,592	44,037,448	47,588,169

Tangible products are still more “old school” in their sales and marketing approaches than intangible ones such as software products. Roy and Ryan Seiders started Yeti Coolers by selling door-to-door to specialty shops such as hunting and fishing stores.¹ This was probably similar to how L.L. Bean, in 1912, sold his first hunting boots. High-flying camera maker GoPro’s first sales came from its founder Nick Woodman’s exhibiting at sports related trade shows in its first year, 2004, when it racked up \$150,000 in revenue.

Tangible products certainly have their challenges in terms of profitability and return on investment. Developing prototypes is expensive. Finished products require further investment for manufacturing and storing inventory, shipping, and carrying accounts receivable. All of this drives down return on investment. Intangible products, on the other hand, require less working

capital; rarely have equipment and machinery costs, higher gross margins, and often times receive immediate payment on sales.

Intangible products also attract most of the venture capital. At a recent conference, a venture capitalist (VC) told the audience that VCs avoid investing in tangible products because they are “a different play” and “can’t grow at nearly the scale of technology and software products.” In the third quarter of 2015, forty percent of US venture capital was invested in software and much of the rest was invested into technology-driven segments such as information technology, media and entertainment, and financial services. Seven percent was invested in consumer products and services—so that category may include some tangible products.

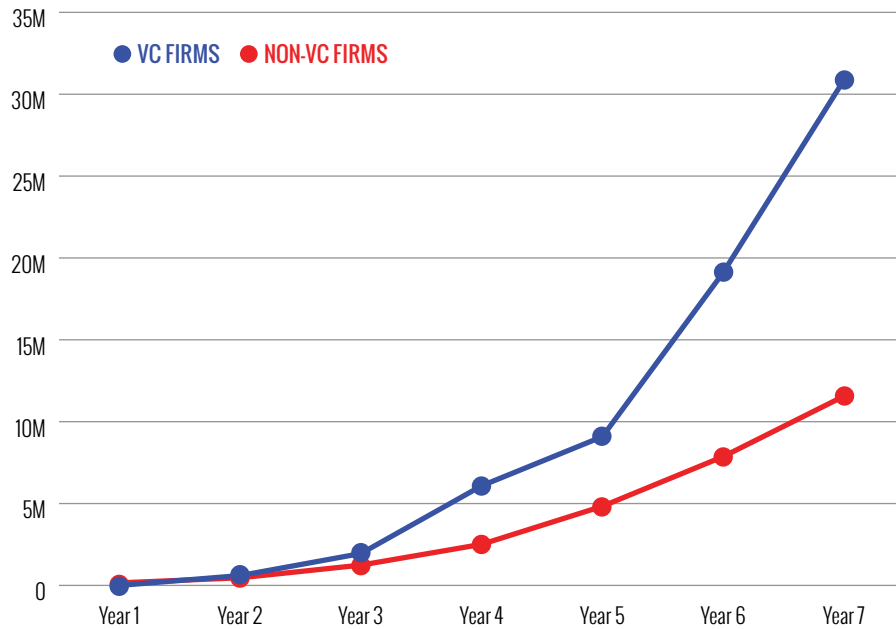
VENTURE CAPITAL-BACKED COMPANIES GREW FASTER

Raising venture capital brings sacrifices for founders in terms of ownership, control, and goal setting. One might expect venture capital-backed firms to grow faster in the beginning years, but that wasn’t the case. Turns out, VCs mostly invest based upon product, market and founder potential rather than early revenue results. For example, year two revenue for companies that raised venture capital was \$600,911 versus \$464,966 for those that didn’t. Forty-four companies raised A-Rounds and the median amount was \$4,450,000. Thirty-six companies raised B-Rounds and the median amount was \$10,100,000. Thirty-two companies raised C-Rounds and the median amount was \$18,000,000. Eighteen companies raised D-Rounds and the median amount was \$42,000,000. Nine companies raised E-Rounds and the median amount was \$150,000,000.

REVENUE GROWTH STUDY

The fact that VC-backed firms grew faster brings up something of a chicken and egg problem; did the VC firms do a good job of picking faster growth firms, or did the VC cash fuel the faster growth?

VC COMPARISON



Revenue	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
VC Firms	0	600,911	1,946,424	6,085,006	9,087,838	19,108,986	30,867,928
Non-VC Firms	155,836	464,966	1,239,000	2,509,111	4,834,730	7,867,743	11,559,729

DO INDUSTRY INSIDERS GAIN AN ADVANTAGE?

In 2008, on CBS's *60 Minutes*, car executive Bob Lutz said about electric car start-up Tesla versus General Motors, "[The founders of start-ups] have no experience in the car business...Once they're into it, they figure it out, 'Hey, this isn't an easy business after all.' And I think that's about the point where Tesla is right now."² But today, eight years later, Tesla has outperformed the Volt in most measures.

The study analyzed 49 successful start-ups: 12 with founders who had industry experience before starting their firms and 37 who had no industry experience. On the following page is a comparison of their first seven years' revenues.

In the beginning, industry insiders grew much faster, accumulating \$3.2 million during their first three years compared to \$1.9 million for outsiders. Perhaps early on the industry insiders benefitted from their industry connections? But by the seventh year, industry outsiders were generating double the revenues of insiders, \$14.9 million versus \$31.5 million, respectively.

From my interviews, I learned that industry outsiders are better at connecting the dots along the way as well as keeping an open mind. Mike Maddock, an expert in innovation offers strong advice about open-

REVENUE GROWTH STUDY

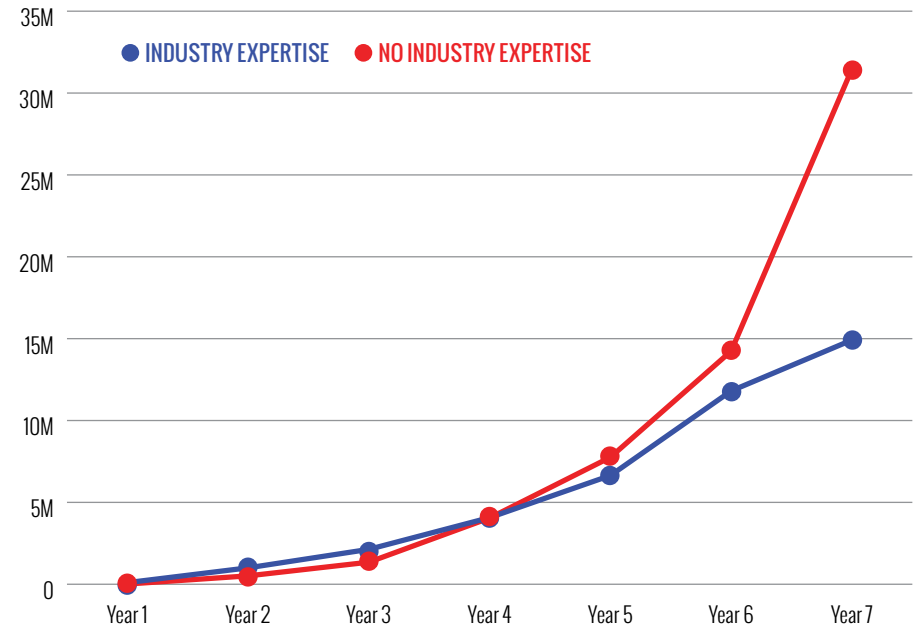
mindedness in his *Forbes* article. “Expertise Is Overrated When It Comes To Starting A Successful Company (And Success In General).”

Industry outsiders don't ignore current business practices in an industry, but they aren't glued to them either. They combine existing business methods with newer methods. Take for example the founder of online mortgage broker LendingTree, Doug Lebdar, who had no experience in banking or technology before he started it in 1996. It took LendingTree a long time to build the right technology and develop the right partnerships with banks in order to get going. In fact, the start-up accumulated less than \$500,000 in revenue during its first three years. But with time, Doug was able to learn and apply what bankers truly needed to make loans within their parameters within his new methods, such as allowing customers to fill out one loan application for multiple lenders.

BONUS FIND #2

On a scale of 1 to 10 (10 being very likely), of 1 to 10 (10 being very likely), what's the likelihood you'll sell the business in the next 3 years? The average response was 3.8.

INDUSTRY EXPERTISE COMPARISON



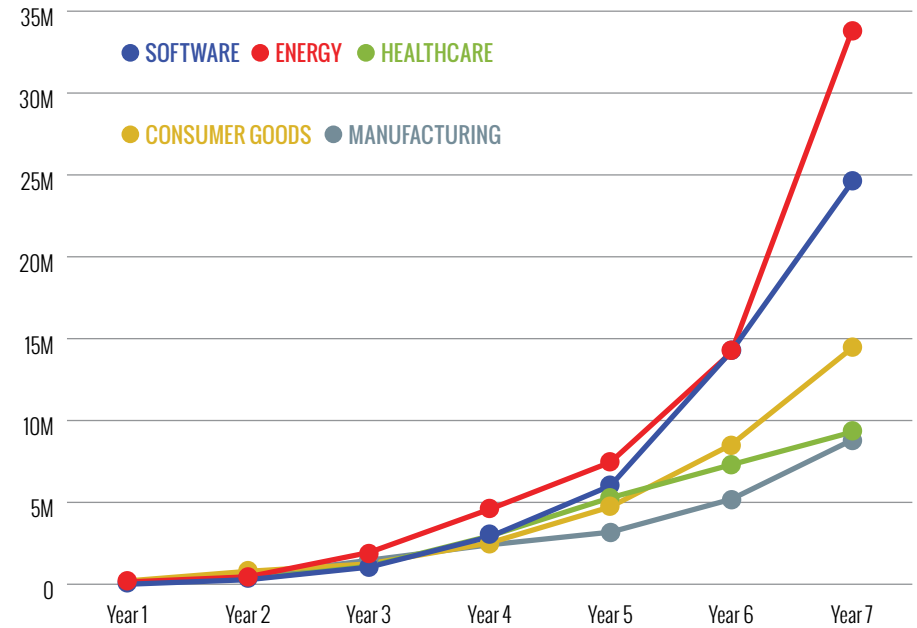
Revenue	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Industry Expertise	98,637	1,002,185	2,131,798	4,070,594	6,643,209	11,808,360	14,917,880
No Industry Expertise	12,942	511,779	1,347,532	4,047,472	7,757,392	14,242,555	31,469,848

REVENUE GROWTH STUDY

REVENUES VARY GREATLY ACCORDING TO BUSINESS TYPE

What types of start-ups grew the fastest? Turns out, the sixteen energy firms in the study grew to become the biggest, partly because the industry is capital intensive which makes high prices necessary. One energy firm, Ambit Energy, grew to nearly a billion dollars by its seventh year. Software start-ups grew to become three times larger than manufacturing start-ups, one reason I noted is that manufacturing companies were often pursuing niche markets while software firms were often pursuing larger, broader markets. Software companies also had more dramatic successes including Salesforce.com which that had grown to \$176 million by its seventh year. However, software firms got off to the slowest starts. Only three of the nine software firms in the study reported having any revenue their first year. The six firms with no revenue were likely programming their products during their first year.

BUSINESS TYPE COMPARISON



Business Type	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Software	0	278,000	1,043,000	2,900,000	6,014,000	14,215,000	24,562,000
Energy	139,000	454,000	1,937,000	4,583,000	7,451,000	14,148,000	33,807,000
Healthcare	61,000	318,000	1,091,000	2,944,000	5,281,000	7,300,000	9,289,000
Consumer Goods	202,000	790,000	1,244,000	2,524,000	4,726,000	8,520,000	14,424,000
Manufacturing	101,000	498,000	1,465,000	2,410,000	3,181,000	5,188,000	8,802,000

IS AGE NOTHING BUT A NUMBER?

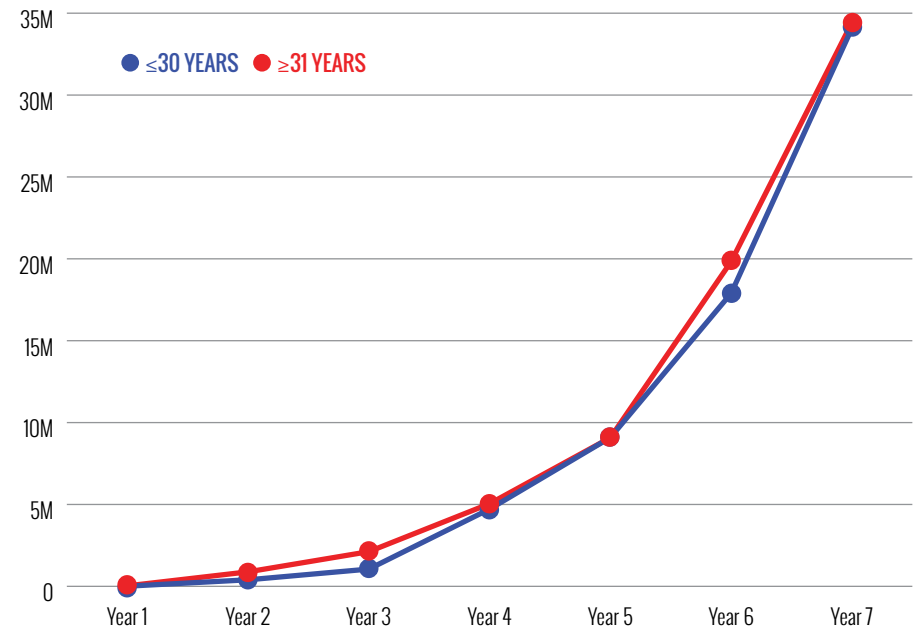
Writer Rita Mae Brown says, “Good judgment comes from experience.”³ Good advice, but does it apply to founders of start-ups? Can founders make good judgments without work experience? Should you start after you’ve worked long enough to know about management, finance, sales and marketing methods, and throw in some street-smart business practices? Pundits say having business knowledge benefits founders a great deal. If true, perhaps you should start a business after 5 or 10 years of work experience. But there are also advantages to starting younger. Perhaps when you’re more wide-eyed and open-minded? Eight of 48 (17%) founders were students when starting out. So, students tend to fare very well – even without much real world business experience.

The average age for founders in the Study was 32. The table to the right is the result of 34 successful start-ups with at least one founder 30-years-old or younger, and 33 start-ups with founders 31 or older. As with those with industry experience, those with age experience got off to faster starts. After three years, those with age experience grew to \$2 million versus \$1.1 million for the younger crowd. But by the seventh year those without experience had caught up as both sets recorded \$34 million in revenue.

I’ve noticed, at least anecdotally, that 25 to 30 is a good age to start a business. I started my own business, First Research when I was 29. I was single with few personal distractions and few overhead expenses. I had

massive energy. I had enough business experience to be dangerous, yet I was young enough to be open-minded. Jeff Bezos started Amazon when he was 30. Jack Dorsey launched Twitter when he was 30.

AGE COMPARISON



Age	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
≤30 years	8,769	399,230	1,052,970	4,717,160	9,087,838	17,897,018	34,087,319
≥31 years	30,000	884,817	2,116,904	5,045,719	9,077,704	19,834,988	34,429,704

STARTING WITH A COFOUNDER VERSUS GOING IT ALONE

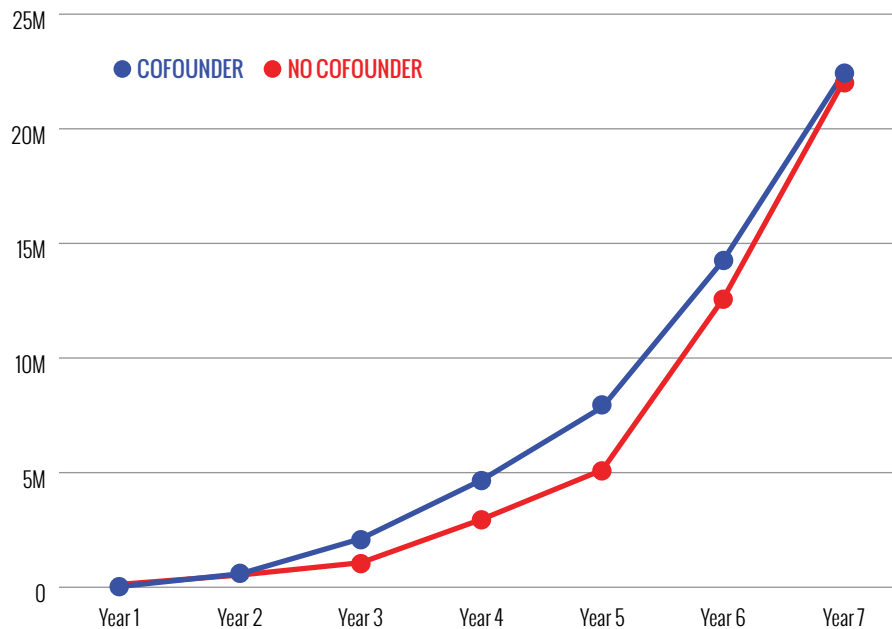
Noam Wasserman’s great book *The Founder’s Dilemmas* lists “Should I launch the business myself or try to attract cofounders?” as one of the most important dilemmas for starting a new company. Having more than one cofounder helps in the beginning because you get more work done without having to pay a salary, but it also creates complexity and ownership dilution.

According to the study, having more than one founder helped start-up revenue grow faster during the first four or five years, but by year seven having the extra founders made little difference. Fifty-seven of 131 start-ups or 43% started with only one founder; 49 or 38% had two founders; 17 or 13% had three founders; and eight or 6% had four or more cofounders.

BONUS FIND #3

19% of start-ups had three or more founders.

COFOUNDER COMPARISON



	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Cofounder	30,000	586,370	2,116,904	4,677,981	7,860,979	14,258,140	22,456,562
No Cofounder	125,410	533,733	1,070,982	2,962,014	5,119,794	12,586,058	22,099,768

REVENUE GROWTH STUDY

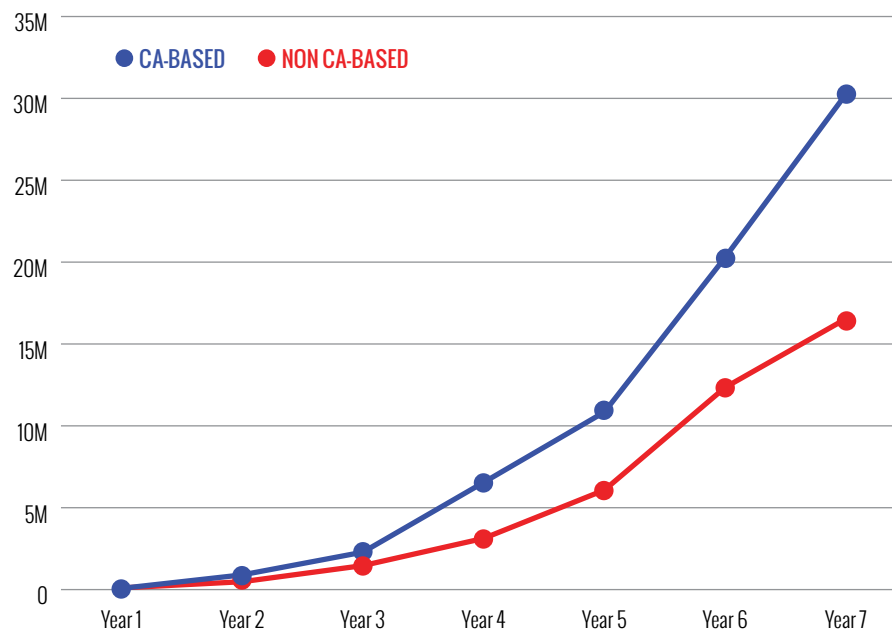
DOES CALIFORNIA GAIN AN EDGE?

There's been so much hype about start-ups from Silicon Valley that I wanted to see the difference between firms starting in California versus elsewhere. As it turns out, companies starting in California do gross more revenue than those from other states. Why the difference? The successes in California were really big successes like Facebook, Dropbox, and AirBnB. When we exclude the big winners, the gap narrows.

BONUS FIND #4

How long does it take to launch your product from the time you begin working on it full time? The average was 6 months, but nearly half of the companies reported only one month.

CALIFORNIA COMPARISON



	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
CA-based	72,769	897,749	2,285,164	6,547,285	10,844,362	20,294,063	30,260,394
Non CA-based	100,716	479,276	1,464,993	3,127,401	6,079,707	12,350,371	16,539,864

REVENUE GROWTH STUDY

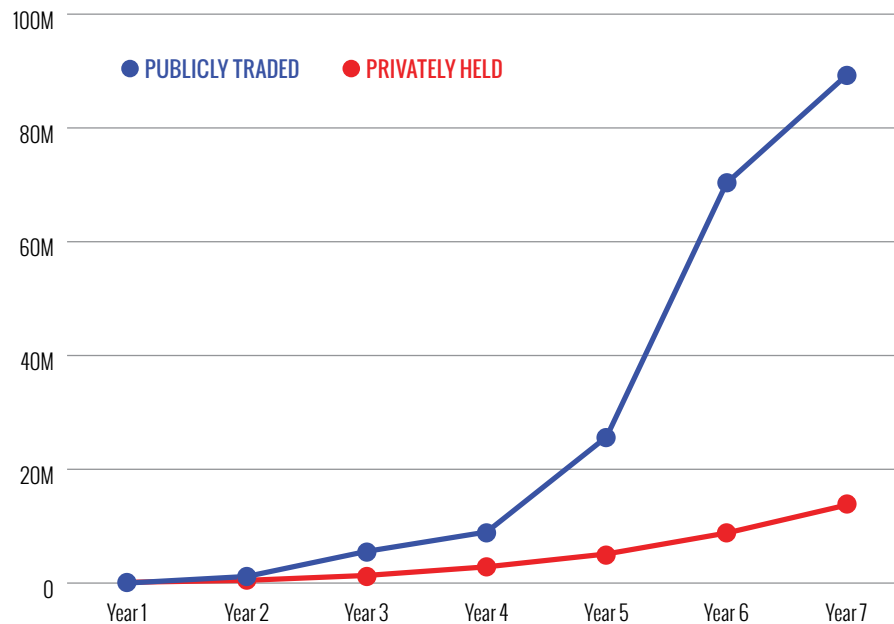
HOW MUCH MORE SUCCESSFUL ARE PUBLICLY TRADED FIRMS?

How much more successful were firms that went public versus those that didn't? The difference is quite large. The 18 firms that went public had \$89 million in revenue by their seventh year versus \$13.7 million for the 120 firms that didn't. During the first two years, the revenues of publicly traded firms were only slightly larger than those that didn't go public.

BONUS FIND #5

On a scale of 1 to 10 (1 being exactly like today), how similar is your product today versus what you imagined before you started? The average response was 3.7 so start-ups change their product visions quite a bit in order to become successful.

PUBLICLY TRADED COMPARISON



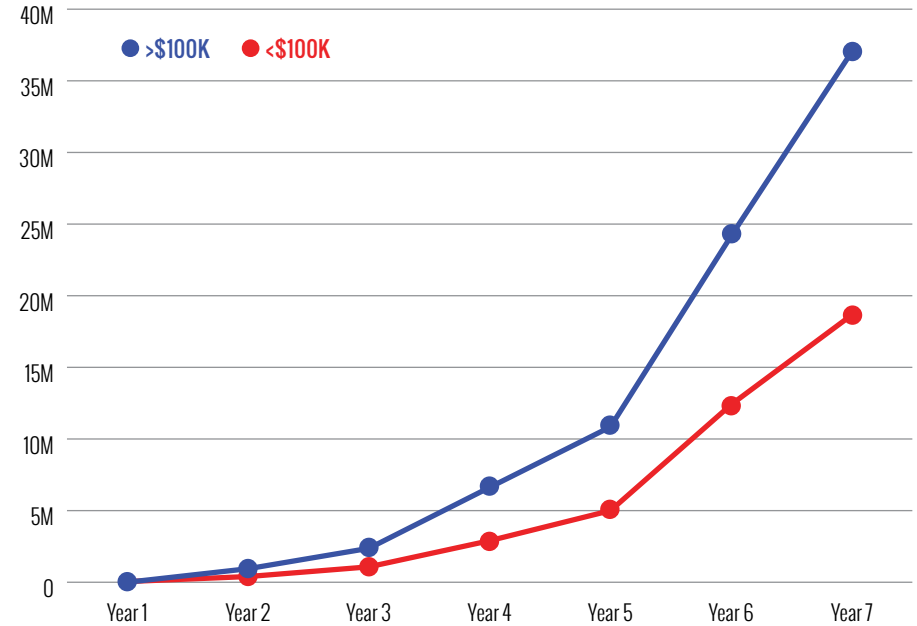
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Publicly traded	0	1,164,233	5,577,729	8,981,442	25,698,587	70,291,950	89,233,286
Privately held	134,396	480,149	1,341,836	2,856,782	5,119,794	8,797,027	13,704,658

DOES RAISING A LARGE SEED ROUND PAYOFF?

The founders received their first funding from a wide variety of sources. Almost all invested their own money. Thirty-seven percent of founders started exclusively with their own money and received no outside funding. Thirty-one percent sourced money from angel investors. Twenty percent sourced money from venture capitalists. Only a few received investment from other sources such as grants or business incubators. Two founders reported they needed no money whatsoever, and that their business' cash flow funded operations.

Do “bootstrapping” founders grow as fast as those who raise bigger bucks starting out? The 26 firms that raised more than \$100,000 to start recorded revenues during their seventh year of \$37 million versus only \$18.7 million for the 13 firms that raised less than \$100,000. This fact inspires the question: Did the companies that started with more than \$100,000 have better ideas? Or did they become bigger because they started with a greater amount of capital?

SEED CAPITAL COMPARISON



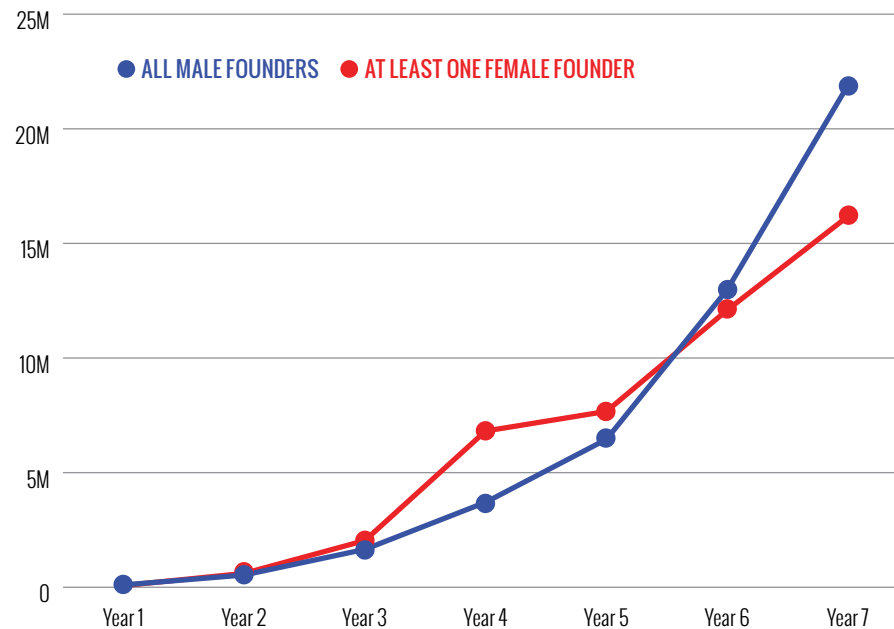
Seed Capital	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
>\$100K	0	945,060	2,367,222	6,623,380	10,844,362	24,173,648	37,040,594
<\$100K	48,510	397,780	1,075,665	2,900,000	4,998,311	12,402,623	18,666,934

REVENUE GROWTH STUDY

MEN VERSUS WOMEN

Does gender affect revenue performance? One hundred twenty-one start-ups were started by men and 15 were started by women. The genders tracked closely during the first six years, but the seventh year men jumped ahead to \$22 million versus \$16.2 million for women.

GENDER COMPARISON



BONUS FIND #6

Companies “pivot” when they make a major change to their business model. The start-ups made an average of 1.4 pivots during their first seven years.

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
All male founders	100,716	533,733	1,652,319	3,707,474	6,452,633	12,980,643	21,901,688
At least one female founders	72,707	605,095	2,037,408	6,815,878	7,671,574	12,092,566	16,181,827

LIST OF ADDITIONAL START-UP STUDIES

1. [“The Panel Study of Entrepreneurial Dynamics”](#) has maintained a study of how people start business. The study continuously surveys firms through time, tracking their progress through a series of follow-up surveys. The study tracks each firm’s progress.
2. [The Start-up Genome Report](#), conducted by entrepreneurs Bjoern Herrmann and Max Marmer in collaboration with Stanford lecturers Steve Blank and Chuck Eesley, researched thousands of Internet start-ups.
3. Noam Wasserman’s book, “The Founder’s Dilemmas” contains findings from his research of 10,000 start-ups.
4. [The Kauffman Index of Entrepreneurship](#) reports activity and demographic information.

START-UPS ARE INDIVIDUAL JOURNEYS

There are a wide variety of examples of hugely successful start-ups built by inexperienced founders (i.e. Mark Zuckerberg of Facebook) and experienced founders (i.e. Mark Benioff of Salesforce.com). For this reason I caution you against judging your start-up journey exclusively by one study or one example. Because start-ups are such creative ventures and your success is based upon all types of circumstances and factors, you should take on this journey when the timing *feels* right. Don’t let lack of experience stop you, because as many study shows, if you set your mind to being successful, you’ll probably figure it out.

1 <http://www.inc.com/magazine/201305/judith-ohikuare/inc-5000-profile-yeti-coolers.html>

2 <https://www.youtube.com/watch?v=v3vTwqGhHbA>

3 https://en.wikiquote.org/wiki/Rita_Mae_Brown#Misattributed



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