



DOI:10.1145/2505337

Michael A. Cusumano

# Technology Strategy and Management

## Evaluating a Startup Venture

*Considering the key elements of successful startups.*

**S**TARTUPS ARE AN engine of economic renewal and change around the world (see “Dealing with the Venture Capital Crisis,” *Communications*, Oct. 2009). But successful startups are rare, and startups that go public and yield strong financials like Facebook are even more extraordinary (see “Reflecting on the Facebook IPO,” *Communications*, October 2012). For example, living MIT alumni created 26,000 active firms with 3.3 million employees and annual revenues of nearly \$2 trillion as of 2006. Five to seven years after their founding, however, only 30% of MIT startups were successful (approximately 60,000 failed).<sup>5,6</sup> The National Venture Capital Association says about 75% of startups succeed, but a recent Harvard Business School study found this true of only about 25%. Stricter definitions of return on capital suggest only 5% of startups succeed and merely 1% go public.<sup>2</sup>

It should be possible for potential investors as well as would-be entrepreneurs to evaluate startup ventures more systematically. This column

attempts to help them do this with a short checklist of key elements to look for. It is based on many years of working with startups and a list earlier published in *The Business of Software* (2004), with some additional reflections and examples.

### 1. A Strong Management Team

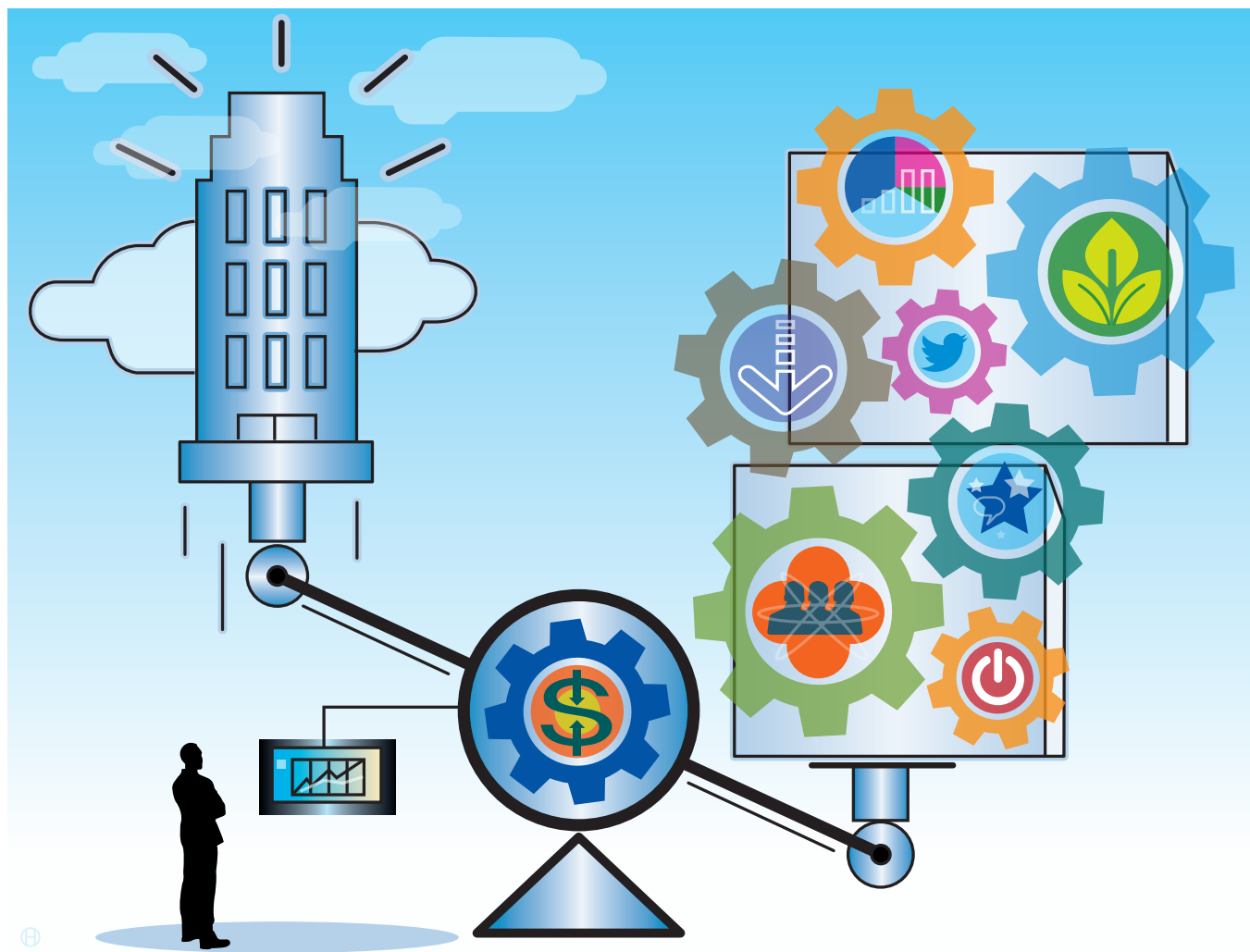
Venture capitalists often say *they invest primarily in people—the entrepreneur or the management team—and secondarily in ideas*. Some reverse this order, invest-

**It should be possible for potential investors as well as would-be entrepreneurs to evaluate startup ventures more systematically.**

ing in ideas first and people second. Ideas, such as beliefs about sectors or technologies that will be important in the future (for example, social media, location-specific applications, health-care software) are worth little without a team to execute the plan successfully. People end up being key in any case. A strong management team has the right level and breadth of experience, and needs strong technical leadership if it is a technology-driven company. At the same time, ventures dominated by technology often spend too much money refining the product and too little effort getting ready for customers and closing deals. Especially with technology startups, success often depends on having founders with solid marketing or sales expertise.<sup>5,6</sup>

### 2. An Attractive Market

Successful startups usually focus on markets capable of becoming large, fast growing, and profitable for new entrants. Whether “horizontal” (for example, everyone with a computer or a smartphone is a potential customer) or “vertical” (for example, every financial services company is a potential



customer), they must be *structurally attractive*. This means there should be high enough entry barriers to keep out new competitors once you enter. Rivalry should not devolve into cut-throat price wars because of too many competitors or one firm that gives away the product for free. Neither buyer power nor supplier power should be strong enough to negotiate prices downward too easily. There should not be good substitutes for the basic product or service.<sup>4</sup> These “five forces” were made famous by Harvard professor Michael Porter. Many startups also require “complementary” products (such as software applications for a new hardware platform) or infrastructure elements (such as Wi-Fi availability)—what Andy Grove of Intel called the “sixth” industry force.<sup>3</sup> If needed, these additional factors must also be available for a startup to succeed.

Horizontally packaged Software as a Service (SaaS) offerings can be rela-

tively easy to scale up, but they usually have high customer churn, high costs of customer acquisition, and small monthly payments from customers who can easily cancel. As a result, these businesses can take many years and lots of funding to become profitable. Even Salesforce.com, a SaaS pioneer, needed vast amounts of venture capital and many years of effort before it created a large installed base, and it still has difficulty earning a profit. Horizontal markets also attract a lot of competition because they are so large. A startup can spend all its money trying to be everything to every customer in such markets (see “Beware the Lure of the Horizontal,” *Communications*, July 2003). Professional service firms targeted at specialized vertical segments (for example, tailoring enterprise software products for financial services or the retail industry) are easier to establish and run at a profit, but they can be difficult to scale because

revenues and headcount usually grow in a one-to-one ratio.

The wrong way to think about a market opportunity is to describe a huge industry (like U.S. healthcare or business intelligence software) and argue that the startup needs to get only, say, half of 1% in order to be viable. Size alone does not make a market attractive. Structural factors are more important. Then the entrepreneurs need to convince investors of their particular advantages over competitors, and how *their* firms will reach customers and capitalize on those advantages. High failure rates suggest *the most likely percentage a startup will get of any market is zero!*

### 3. A Compelling New Product or Service

A *compelling* product or service appears as a “must-have” to a specific type of customer. Some entrepreneurs have a deep familiarity with a market

## Call for Nominations for ACM General Election

The ACM Nominating Committee is preparing to nominate candidates for the officers of ACM: **President, Vice-President, Secretary/Treasurer;** and two **Members at Large.**

Suggestions for candidates are solicited. Names should be sent by **November 5, 2013** to the Nominating Committee Chair, c/o Pat Ryan, Chief Operating Officer, ACM, 2 Penn Plaza, Suite 701, New York, NY 10121-0701, USA.

With each recommendation, please include background information and names of individuals the Nominating Committee can contact for additional information if necessary.

Alain Chesnais is the Chair of the Nominating Committee, and the members of the committee are Sheila Anand, Susan Dumais, Ben Fried, and Fabrizio Gagliardi.



and are able to identify such customer needs that are unfilled or poorly met. At earlier times, Microsoft did this with PC programming languages, Netscape with a mass-market browser, and Apple with the Macintosh, iPod, and iPhone. Some entrepreneurs create companies around a product or service they themselves desperately want, as Steve Wozniak did with the first Apple computer and Steve Jobs did with the iPad. But attracting funding from professional investors usually requires more than emotion: They want quantitative and qualitative data demonstrating the superior benefits of the new product or service as well as what potential users are willing to pay to get it. This *value* to customers ultimately depends on what competing or substitute products and services are available and at what price.

Some startups enter a market with a product or service that is cheaper but less functional than what large, established firms offer. The new offering may seem to offer little value and the venture little potential, but this evaluation may be misleading. Clayton Christensen's 1998 book, *The Innovator's Dilemma*, discusses this specific type of opportunity and threat—when large firms focus too much on existing customers and fail to recognize the threat of new technologies, services, or business models that are initially inferior but improving quickly.<sup>1</sup> Such examples have occurred with small disk drives, personal computers, digital photography, and Internet-based or SaaS applications versus traditional packaged software.

#### 4. Strong Evidence of Customer Interest

Startups need to convince investors that *actual customers are willing to buy the new product or service*. Most entrepreneurs underestimate how difficult it will be to sell beyond “friends and family.” Some new companies boast they have lined up many beta users and marketing partners, but these are not as convincing as actual letters of intent to purchase.

A prototype or early product version helps land new customers by allowing them to visualize how the product will work. Product firms that try to get customers or funding without a prototype

generally have trouble.<sup>5,6</sup> Service startups do not have physical prototypes, but they can try to convince customers to begin with a limited engagement and then use a small success to indicate they can handle a bigger project.

#### 5. Overcoming the “Credibility Gap”

The “credibility gap” is the *fear among customers that the venture will fail*, leaving the buyer without technical support or a future stream of product upgrades. Since more than 90% of ventures do fail, this fear is real. It is easy for customers to go with an established vendor, even with an inferior or more expensive product. This situation leads to a “Catch-22”: a startup must line up paying customers to serve as references for new customers, but new customers will usually not sign on unless the startup has sufficient money to last a significant time period. *The credibility gap may be the most common cause of failure for startups*. To tackle this dilemma, startups can do several things. They can offer large discounts to get those first reference customers, or partner with established firms for long-term support. They can line up investors, advisors, and board members to show the startup is a viable enterprise. Or the startup can package its product or deliver the service in such a way that the customer experiences immediate benefits and does not have to worry about the venture's longevity.

#### 6. Demonstrating Early Growth and Profit Potential

Many investors want to know *how the startup will grow the business and generate enough cash to reach breakeven and maybe even profitability*. These

**Size alone does not make a market attractive. Structural factors are more important.**

milestones must happen in a time-frame consistent with the available funding. It is impossible to predict whether or when a new firm will actually make any money. But investors need to be extremely wary of business plans that call for many tens of millions of dollars and years of R&D and marketing before the venture is expected to generate any revenue. When too much time and money are required, too many bad things can happen: New competitors can enter and established firms can counterattack. Technologies can become outdated or government regulations can change. Moreover, a venture that has to keep raising new rounds of funding often leaves both the early investors and the entrepreneurs with little equity. Once the startup becomes financially desperate, later investors can impose draconian funding terms. Promising MIT startups such as E-Ink in electronic displays, and A123 Systems in batteries, turned problematic in this way, as did Akamai, which took a long time to build what is now a great business in digital content delivery.

## 7. Flexibility in Strategy and Technology

Investors look for *focus* in a startup because most have limited resources and time compared to large, established firms. However, most startups also need to demonstrate *flexibility*—in strategy, business models, and technology. Startups often get the product strategy and the business model *wrong* the first time around. Even with multiple chances, they often get the second and third times wrong as well. So both focus and flexibility, which seem contradictory, are often critical to success. The right formula is likely to emerge only over time, through trial and error, rather than through deliberate planning in advance.<sup>a</sup> Startups need to focus their resources on a particular approach, but then be prepared to change course or “pivot” quickly if the initial strategy is not working. To gauge strategic flexibility, investors should talk to the founders and the management team about

a See, for example, H. Mintzberg, Crafting strategy. *Harvard Business Review*, July–August 1987, 66–75.

## Of course, success and failure are easy to explain in retrospect but difficult to predict in advance.

different options. Have they thought about what else they could do with the technology and the skills they are cultivating? For a software startup, a potential investor might also ask how tightly the code is tied to a particular hardware or software platform, and how general-purpose the functionality of the code is.

## 8. Potential for a Large Investor Payoff

A startup wanting more than “angel investors” or “bootstrapping” with the help of friends and family should offer good prospects to professional investors for a significant payoff within a time frame that is typically no more than seven years. Venture capitalists often look for >20% annual returns on their portfolios, so they are looking for big winners. Not surprisingly, they tend to give most of their money to the better startups, which often do not need money to survive but need investment to get big fast.

It is impossible to know in advance which firms will succeed, but the eight points discussed in this column form a framework to inform this murky question of potential investor payoff. For many venture capital firms, the market opportunity has to be large enough for the startup to become worth at least \$100 million. The business model must demonstrate how to scale up sales while maintaining some advantage over the competition. Scaling can be relatively easy (for example, for a packaged software product company, although competition is fierce), relatively difficult (for example, a SaaS company that needs many customers paying those small monthly fees), or

extremely hard (for example, a professional services company that is costly and time-consuming to grow because it must hire and train so many people). Automated horizontal services delivered via the Internet, (for example, Google, LinkedIn, Facebook, Pandora Radio, Spotify, FourSquare) can scale quickly because of platform dynamics and network effects (see “The Evolution of Platform Thinking,” *Communications*, Jan. 2010). Still, there are no guarantees these firms will build a profitable business or go public. Nonetheless, a large payoff might still come from another “liquidity event” in addition to an IPO such as selling out to a larger firm. We can estimate the potential value of such deals by using the recent sale prices of comparable startups or the market values for comparable firms that are publicly traded.

## Conclusion

Of course, success and failure are easy to explain in retrospect but difficult to predict in advance. Potential investors must therefore ask, with each of the eight points mentioned here: *What can I know and how early can I know it?* Would-be entrepreneurs also should think carefully about the items on this list. Unforeseeable factors such as chance events and timing affect all firms. But those startups that can objectively evaluate their potential and improve their weaknesses should be able to increase the possibility of their success. □

## References

1. Christensen, C. *The Innovator's Dilemma*. Harvard Business School Press, Boston, 1997.
2. Gage, D. The venture capital secret: 3 out of 4 startups fail. *The Wall Street Journal* (Sept. 19, 2012).
3. Grove, A.S. *Only the Paranoid Survive*. Currency/Doubleday, New York, 1996, 30.
4. Porter, M.A. *Competitive Strategy*. Free Press, New York, 1980, 3–33.
5. Roberts, E.B. *Entrepreneurs in High Technology: Lessons from MIT and Beyond*. Oxford University Press, New York, 1991.
6. Roberts, E.B. and Eesley, C.E. Entrepreneurial impact: The role of MIT—An updated report. *Foundations and Trends in Entrepreneurship* 7, 1–2 (2011), 1–149.

**Michael A. Cusumano** (cusumano@mit.edu) is a professor at the MIT Sloan School of Management and School of Engineering and author of *Staying Power: Six Enduring Principles for Managing Strategy and Innovation in an Unpredictable World* (Oxford University Press, 2010).

The eight factors framework and discussion is adapted from M.A. Cusumano, *The Business of Software*. Free Press, New York, 2004, 195–214.

Copyright held by Author/Owner(s).