March 2014

Wharton | SAN FRANCISCO   KNOWLEDGE@WHARTON

2014 Wharton | *San Francisco* Review:

BUILDING BRIDGES TO INNOVATIVE OPPORTUNITIES

INTRODUCTION

Building Bridges to Innovative Opportunities

In the past decade, there has been a major shift in the ways that entrepreneurs obtain financing for their companies, giving way to an "investment food chain" for early stage firms that has extended to include incubators, "super angels," crowdfunding and even bulge-bracket investment banks, along with increasing segmentation in the venture capital sector. Meanwhile, entire new industries — including 3-D printing, enterprise tools, data analytics, cloud computing and gamification — have emerged as prime interests for investors at every stage of the spectrum.

In this report, Wharton | *San Francisco* and Knowledge@Wharton explore these issues and others through the results of a survey on the current business environment and the changing face of the start-up and venture capital community in the Bay Area. The report also includes K@W coverage of three events held at Wharton | *San Francisco* in which executives recount their own experiences launching innovative enterprises.

The Next Generation Model for the Investor-startup Ecosystem

THESE DAYS, TECHNOLOGY START-UPS WANT MORE than just a check from venture capital backers and other investors. They are increasingly looking for operational help and industry expertise as well, a recent survey of Wharton alumni in the San Francisco area shows.

In a marked departure from the dot-com era of the 1990s, these companies also put more value on market know-how and connections over snagging a high valuation or a venture capitalist with a marquee name, according to a November 2013 survey of 126 mostly senior tech executives or managers who work at young companies.

Such a shift in the trend is a result of venture capitalists also raising the bar on their investment criteria. No longer are VC firms content to just take a stake in a company in a hot industry with growing market share, at least for startups beyond the seed stage of investment,. Now investors are also insisting on start-ups having a business model with a path to profitability.

"Investors are no longer just blindly supporting a company, and startups are no longer just doing well by virtue of being in a hot new market space," says Saikat Chaudhuri, Wharton adjunct associate professor of management and executive director of the Mack Institute for Innovation Management, who helped craft the survey questions. "Companies really are expected to think about profitability."

As investors ask for proof of sustainability, startups in turn want backers to help them grow instead of just writing a check. The explosion of incubators and accelerators like Y-Combinator, 500 Startups, RocketSpace, Rock Health, Plug and Play and others is in large part attributable to this need. Even many institutional VC firms, such as Andreessen Horowitz, Kleiner Perkins, and Sequoia, are selling more than money. "Other things like the operational metrics, recruiting capability, marketing and industry expertise and connections, these things have become hugely important," says Chaudhuri.

In the survey, 32% of respondents said they chose backers based on industry expertise and connections. It was the second most popular answer — topped only by the level of capital required — at 35%. Other factors included the strategic and commercial benefits brought by the investor, speed of the investment decision and personal chemistry.

Notably, a marquee name and the best valuation, though still important, came in a bit lower among the reasons the start-ups chose their slate of investors. Half of the survey participants worked at companies with 50 or fewer employees and the majority were in Internet, biotech, social media and life sciences industries. Also, 54% of respondents were between 36 and 55 years of age.

"Investors are no longer just blindly supporting a company, and startups are no longer just doing well by virtue of being in a hot new market space."

As start-ups' needs change, the make-up of venture capitalist firms must undergo some shifts as well, Chaudhuri points out. VCs increasingly will need to have industry and operational experts on board alongside the token financial whiz. Indeed, 56% of survey respondents said VC firms have to "restructure substantially" to stay relevant to the start-up community. This is particularly true of those startups in the social media/consumer app/mobile/Web 2.0 space, where it is possible to develop a product and engage in customer acquisition activities for very modest levels of capital.

Wharton management professor Raffi Amit says the VC industry already is going through a "seismic" change. "The industry is contracting," he states, noting that there were 1,000 VC firms in 2000, but now only 300 remain active. But while the number of VCs has declined, the overall investment pot for start-ups is larger because the number of alternative sources for funding — including "super angels," incubators and crowd-funding platforms — has "exploded," Amit adds.

Meanwhile, the cost of starting a company has fallen substantially, leading to a "tidal wave" of new entrepreneurs, he says. But while start-ups may get initial funding, many are unable to acquire additional capital in a second round and die. Thus, having an investor with operating experience is "very advantageous," Amit notes. "Many founders are young and have never run a company. Having a 'grown up' to help them avoid pitfalls would be enormously helpful."

The new focus of start-ups and VCs also reflects a maturing of players in the technology sector after learning painful lessons from the dot-com crash of 2000. VCs are now vetting investments more carefully. "Instead of spreading a lot of money thinly, people are now willing to wait a little bit for more certainty in the business and then put a little more money into those firms that seem more promising," Chaudhuri says.

> **"The number of companies that are failing because of the 'crunch' that occurs when the institutional VCs fail to make these follow-on investments is massive."**

Case in point is former star Morgan Stanley analyst Mary Meeker, a well-known Internet bull who is now a partner at famed VC firm Kleiner Perkins Caufield & Byers. "She was one of the most bullish people," Chaudhuri notes. Now, Meeker, who was hired for her ability to read industries and their likely strategic direction, is more measured. "She's still someone whose role is to think about the future and where things are going," he adds. "But she is much more cautious."

Wharton | *San Francisco* vice Dean Doug Collom has a different view. There is a well-known phenomenon occurring today in the industry call the 'Series A crunch' — and more recently, the 'Series B crunch' — that has resulted in part from a lot of institutional VCs spreading modest, seed-level amounts of money in early stage companies, with little or no diligence," Collom says. "Then, when these startups burn through their seed capital and seek to step up to institutional levels of financing, i.e., in the range of $2 million to $5 million or more, the VC investor only at that time will take a more deliberate look to see if a follow-on financing at that level can be warranted. The number of companies that are failing because of the 'crunch' that occurs when the institutional VCs fail to make these follow-on investments is massive."

SILICON VALLEY CACHET

Silicon Valley continues to be far ahead of other global tech enclaves in terms of the number of companies, number of deals and number of investment dollars situated in the area. While 56% of respondents believe the San Francisco Bay Area remains an important locale for access to capital and its culture of innovation and risk-taking, there are grumblings as well. The high cost of living and doing business in Silicon Valley were the two top gripes of executives, with 38% of respondents giving it a high ranking. The next complaint was competition for talent. "You're starting to see the weakness of the Silicon Valley ecosystem," Chaudhuri points out. "That's also a big change."

Other concerns include traffic in the Bay Area, high taxes and a bias against hiring or working with people who are traditionally trained or have more experience. One survey participant wrote that Silicon Valley can be close-minded when it comes to women and seasoned workers, calling these challenges "invisible hurdles" that keep many entrepreneurs on the sidelines "due to no fault of their own."

Another respondent wrote that Silicon Valley "breeds a culture where everyone here starts thinking that the rest of the world also consumes media and technology the same way as they do in the San Francisco Bay Area."

But the Valley's weaknesses do present an opportunity for other cities to lure tech entrepreneurs to their borders if they can offer a more attractive environment, such as lower living costs and policies that are friendly to business, Chaudhuri says. "They need to provide the right framework for entrepreneurship and innovation to thrive," he adds.

As for the biggest competitive threat to a robust tech economy in the Bay Area, the high cost of living was most often cited with 28% of votes. It was closely followed by the presence of a "hostile" regulatory climate imposed by city, state and federal governments, at 23%.

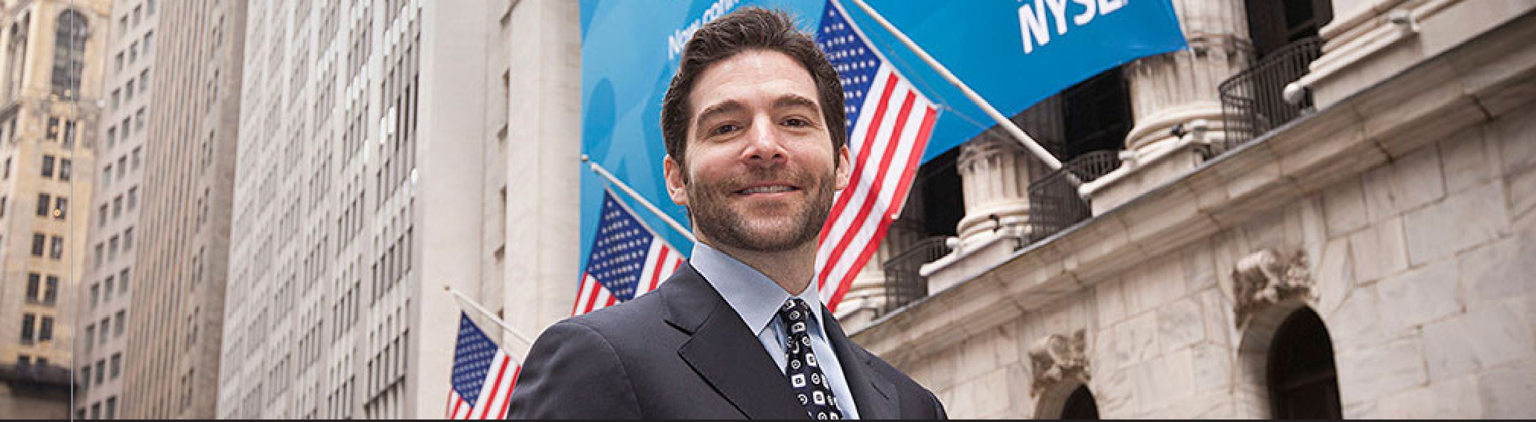
Other concerns include the immigration hurdles of workers, the impasse between the President and Congress over resolving national economic issues, and access to a skilled workforce. Low in the rankings was competition from other countries such as China, India and Israel, which were only considered a modest threat at best.

Silicon Valley, for all its storied history, is not the best place for all types of technology. Other cities can offer expertise that the Bay Area cannot, experts note. "Not everything will be solved by Silicon Valley," Chaudhuri says. For example, the health care equipment and non-grid energy industries are markets that other cities can specialize in. "You don't expect those to come from California," he says. "They require different conditions for optimal innovation to take place."

Still, Silicon Valley remains far ahead of runner-ups such as Boston, Austin, Texas and the Research Triangle Park in North Carolina when it comes to attracting tech start-ups. Nine out of 10 respondents expressed medium to high confidence that growth in the area will continue or proliferate. "They think it's still a vibrant ecosystem," says Chaudhuri.

But what surprised Chaudhuri the most was a strong focus on expanding mainly in California and the U.S. In the survey, nearly nine out of 10 respondents said they were planning to expand in the next 12 months, with 41.7% eyeing growth plans for California and 25% targeting other U.S. states. Only 5.2% said they were looking at China, 3.1% said India and 2.1% targeted Europe. "I would have thought China, India and so forth would be much higher," he notes.

Such an insular response troubles Chaudhuri because these young companies might miss getting an early foothold in fast-growing economies abroad. Moreover, he points out that venture capitalists do ask start-ups about their global strategies. "For them not to think about the emerging markets … is a mistake," he says. "Different markets are blooming, so don't miss the boat. It disappointed me, honestly, to see that."



How LinkedIn Manages Hyper-growth over the Long-term

THE LAST FEW YEARS have seen the emergence of a number of successful public technology companies. The social networking site LinkedIn would likely be at the top of many of those rankings.

LinkedIn was founded by a team headed by Reid Hoffman in 2002 and went public in 2011. While many of LinkedIn's peers ultimately disappointed their backers once they debuted on the open market, the site has been enthusiastically received by investors. It has also become a go-to spot for networking and job searching.

> "It's invaluable to have someone on the team who understands technology and the way it's going to be changing society. Then the job is to get in front of those trends and unlock a tremendous amount of value."

Jeff Weiner joined LinkedIn as CEO in 2008 after a stint at Warner Brothers as head of its online divisions, developing the company's initial business plan in that space. Previously he spent more than seven years at Yahoo, including a position as executive vice president of its network division. At Yahoo, he was head of the team that directed the acquisition of Inktomi, AltaVista and FAST, in addition to helping to develop the company's search technology.

During a fireside chat at Wharton's San Francisco campus held in conjunction with the Wharton Entrepreneurship Alumni Dinner, Weiner spoke with Andrew Trader, co-founder of the social games site Zynga, about LinkedIn's evolution, the importance of good execution and Weiner's approach to recruiting.

A ROCKET IN SPACE

According to Weiner, being part of a hyper-growth company is "like being a rocket in space." Just a slight initial miscalculation in strategy can become a serious problem further down the road. "Hyper-growth companies often get so caught up with innovation and the adrenaline rush that they chase the next bright shiny thing at the expense of getting their launch trajectory right," he noted.

Being able to execute well quarter after quarter involves putting the necessary processes in place early on, which is typically a lot less glamorous than pursuing the next technology breakthrough, Weiner said. "In addition, you need to be constantly revisiting this stuff, because the infrastructure you put into place five or 10 years ago, in a world dynamic such as ours, is something you're going to have to reinvest in."

When LinkedIn launched in 2003, the site received as few as 20 sign-ups on some days. Today, the site reports having more than 259 million users in 200 countries and more than two new sign-ups per second. In its most recent quarterly earnings report, LinkedIn reported revenue of $393 million — a 56% increase from the same period in 2012 — but the company's high valuation has led to questions over whether it can continue to grow at such a dramatic rate.

As the site begins its second decade, Weiner said that he is always looking for potential new hires with what he called "technology vision." In a world increasingly driven by technology, "it's invaluable to have someone on the team who understands technology and the way it's going to be changing society. Then the job is to get in front of those trends and unlock a tremendous amount of value."

Weiner said his interviews with job candidates always begin with the same two initial questions: "What is your dream job?" and "What is it that you want to accomplish?"

He noted that as the firm has grown, culture and values have become increasingly important. "A few years ago, I might have rolled my eyes and thought of some Dilbert comic strip. I wasn't a big fan," he stated. "The companies I had been at had codified cultures and values, but people weren't walking the walk."

It wasn't until he got to LinkedIn, however, that Weiner realized that such things need to go beyond mere platitudes that show up in annual reports or on posters decorating employee break rooms. "We set about establishing very clearly what our values were," he said. "And far more important than that, we live them. We live them every day in every way possible, and that starts with leadership."

THE NEXT PLAY

As he contemplates LinkedIn's future, Weiner is reminded of the philosophy of Duke men's basketball coach Mike Krzyzewski. "Every time the Duke Blue Devils complete a sequence, on either the offense or defensive side of the court, no matter how well or poorly they performed, the coach yells out the same thing: 'Next Play,'" Weiner noted. "He doesn't want the team celebrating if they did something extraordinary, but he also doesn't want them lamenting a poorly executed play."

When LinkedIn filed for its initial public offering in January 2011, Weiner said it was important that employees understood that going public was just one more stepping stone, as opposed to the company's end game. "After we filed, I walked around and thanked every employee that I could get to. What struck me was that everyone I went up to talked about our next play. It was 'Next play this,' and 'Next play that.'" The phrase became LinkedIn's unofficial mantra; when employees rang the opening bell at the New York Stock Exchange on the company's first trading day, they had T-shirts printed with the "LNKD" ticker symbol on one side and "Next Play" on the other.

"I draw a very clear distinction between leadership and management," Weiner noted. "When I was younger, I didn't understand the difference. For me, leadership is the ability to inspire others to achieve shared objectives." The key term there is "inspired," he added: "For me, that's the entire difference between leaders and managers. Managers tell people what to do. Leaders inspire them to do it."

According to Weiner, when employees come to a manager with a serious issue, the manager must be able to understand where the employees are coming from, including their strengths and weaknesses, fears, what motivates them and what inspires them. "That takes an inordinate amount of time and energy," he noted. "But most managers want to get it over with as quickly as possible so they can move onto the next thing."

Instead, Weiner said managers need to be able to put themselves in the shoes of the people they work with and understand things from others' perspectives. "As human beings, most of us tend to project our own worldview onto other people," he pointed out. "This is especially common in less experienced executives, and I was once one of them."

Now that LinkedIn is a publicly traded company, Weiner also has to consider the expectations and motivations of the company's shareholders. "You want to find investors who will think not just about today, but next year; the next three years; the next five years," he noted. "Because if you're trying to build out a truly game-changing transformational platform, it costs. Those investors are out there, and if you can attract them, they will stick with you."

"After we filed, I walked around and thanked every employee that I could get to. What struck me was that everyone I went up to talked about our next play."

It's up to company leadership to make sure the firm as a whole doesn't fall prey to the quarter to quarter expectations of analysts and Wall Street at large, Weiner added. When people ask him for advice about going public, Weiner noted that his first suggestion is, "Don't go until you're ready." By readiness, he means "knowing what it is you are trying to accomplish, having a sustainable competitive advantage, having the right team in place — and then not wavering from that."

'HAPPY WIFE, HAPPY LIFE'

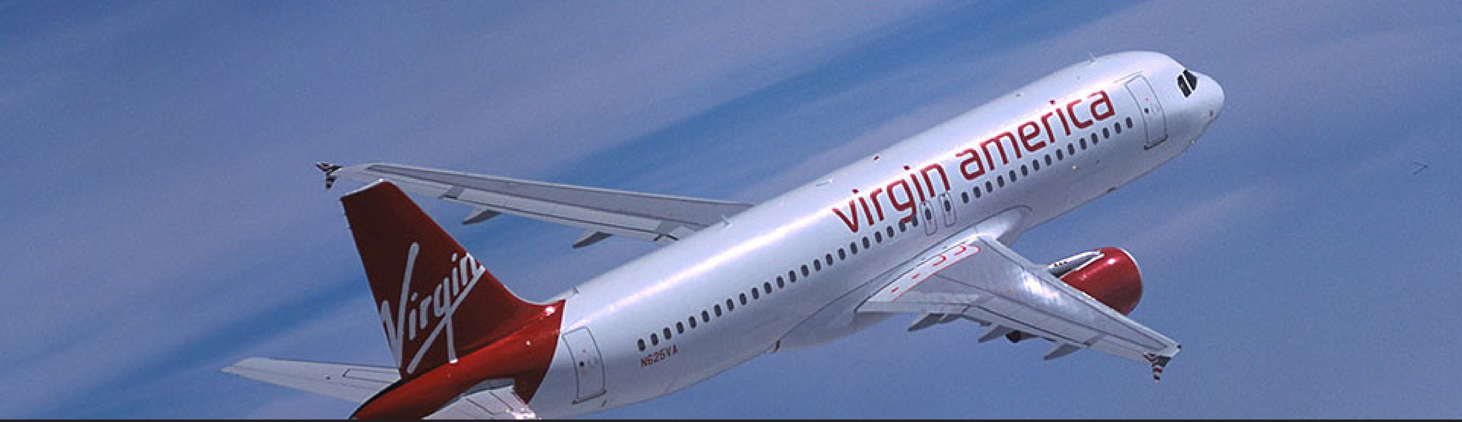
Prioritization is equally important when balancing a high-stress leadership position with personal and family life, Weiner said. "It took me four years to realize what made me happy: looking forward to going to work in the morning, and looking forward to coming home at night," he noted.

Weiner credited his wife with being the foundation of their home. "When I get asked about the most important piece of advice I was ever given, I repeat what an old friend told me years ago: 'Happy wife, happy life.' Because she is such an incredible wife and mother, it affords me the opportunity to do what I do." But Weiner added that he has had to prioritize in order to be home in time to tuck his daughters in at night, and to make sure business trips don't keep him away for too long.

What has helped him do that, Weiner said, is adhering to a strict regimen for things like when he wakes up in the morning and when he exercises. "And, during the day, I carve out a couple of hours, without fail, when nothing is scheduled," he noted. "It's buffer time — a time to think strategically and to just catch my breath."

"During the day, I carve out a couple of hours, without fail, when nothing is scheduled. It's buffer time; a time to think strategically and to just catch my breath."

He advised attendees that a similar tactic can be invaluable for accomplishing their career goals. "The single most important thing that people can do in terms of realizing their dreams professionally is to understand exactly what it is they want to accomplish," Weiner said. "It sounds simplistic, but it never ceases to amaze me how many people are well down the path of their career, but who never took the time to figure out what it is they actually want to do. And then they wonder why they're not happy, motivated or inspired by work."



How Virgin America Beat the Odds — and the U.S. Airline Market

HOW DO YOU START A MASSIVE NEW BUSINESS in the face of investor skepticism, determined regulatory opposition and a global economic downturn? If you're Virgin America airlines, the answer involves political savvy, tenacity and skillful use of social media — not to mention some last-minute assistance from a Summer of Love rock legend.

Fred Reid, founding CEO of Virgin America, told the story of Virgin's launch as part of Wharton San Francisco's Executive Speaker Series. Virgin America, which began service in August 2007 and focuses on offering flights between major cities on the East and West Coasts, is an entirely separate entity from Richard Branson's Virgin Atlantic; Branson, in fact, is restricted to being a minority shareholder in Virgin America due to laws that limit foreign ownership of U.S.-based airlines. Such laws are common in global aviation.

Though the flamboyant Branson directly or indirectly controlled less than half of Virgin America, his connection with the airlines would become the dominant issue in its efforts to win approval from the U.S. Department of Transportation. Reid said the process took 18 months, longer than normal for an airline.

The reason, Reid recalled, is that Branson had for many years worked to convince United Kingdom regulatory agencies to deny to American carriers much-coveted expanded landing rights at London's Heathrow Airport. When a company associated with Branson announced it would be seeking approval to get started in the U.S., his competitors from the American airline industry wasted no time returning the favor — and, according to Reid, the companies had a sympathetic ear from the U.S. Department of Transportation.

The efforts to launch the airline began in New York in 2004. Reid noted that Virgin America had ambitious plans from the start. For example, it wanted to launch nationally from day one, something he said had rarely been done. (Airlines such as Southwest that are now national carriers started out as regional operations and grew slowly.) It also planned on operating in what was considered the most prestigious airport in each market where it planned to offer flights. For example, Virgin wanted to fly out of San Francisco International Airport in the Bay Area rather than Oakland International.

> "You always hear that people are everything, but often, that's a platitude that gets ignored. At Virgin, it wasn't ignored."

"It took quite a bit of nerve," Reid said, and also, money. The company ended up raising $177 million in venture capital — more than had ever been raised for an airline, Reid noted.

WHITE LEATHER AND SEATBACK SCREENS

Right from the start, Reid said, the Virgin America team was very conscious of the sort of branding issues that would eventually become one of the operation's hallmarks. The business intended to provide the best first-class experience available, and took a number of unusual design steps to make that happen, such as choosing white leather for all first class seats.

The company also famously designed the planes to feature a video screen in every seatback, which would carry live television and other forms of in-flight entertainment that were unknown at the time. And it added seemingly minor features that made a significant difference for passengers, including electrical outlets at every seat for corporate road warriors concerned about their laptops running out of power mid-flight. The power outlets proved so popular, Reid said, that they eventually starred in a Virgin America commercial.

(While Virgin America became famous for its seatback screens, Reid noted that were he designing the in-flight system today, he would omit the feature, simply because most passengers now bring their own laptops or tablets. He would instead install as powerful a wireless networking system as current technology would allow.)

There were other parts of the airline industry rulebook that Virgin America planned to ignore. Reid pointed out that its pilots, for example, weren't assigned uniforms that looked like they belonged on "admirals in the Russian navy." And they would be urged to mingle with guests before departure, rather than exist merely as omniscient voices on the plane's PA system.

"While I never showed fear, I would sometimes share with everyone the fact that I was nervous."

Hiring was approached carefully. Reid said he wanted everyone at the company to have a common sense of purpose. "We spent more time on that that anything else," he noted. "You always hear that people are everything, but often, that's a platitude that gets ignored. At Virgin, it wasn't ignored. We wanted people who were energetic and who put their heart into it. When people walk into a meeting room and they are angry or frustrated, or they annoy other people, it's a cancer on the entire organization."

When the Virgin team first started working, leadership compiled a list of 5,400 things that would need to be completed before the airline could launch. One by one, Reid said, most of them got done.

UNEXPECTED TURBULENCE

There were, of course, hiccups. For example, while Virgin America was using Airbus planes, the custom interior work involving the company's unique colors and lighting system were to be installed by a Canadian company. The Toronto firm took delivery of the craft, and was very nearly done with its work when the Canadian government told Virgin it was impounding the plane because the company involved had not paid its taxes, Reid recalled. It took more than a month for the plane to be cleared to fly out of Canada.

By far the biggest hurdle, though, involved U.S. regulatory approval. Reid said that Virgin officials had estimated the process would take 10 months, arriving at the figure after noting that JetBlue took four months to go through the same process.

While landing rights had long been a trade issue between the U.S. and Britain, Reid noted that in 2005, when Virgin America officially submitted its 408-page application, the timing was believed to be opportune. Political relations between Washington and London were good because of British support for the Iraq War.

But things didn't work out the way the company had hoped. As soon as the application was filed, briefs protesting it were submitted to the U.S. Department of Transportation by nearly every major American carrier, still angry about being shut out of Heathrow routes, as well as by labor unions, which objected to some of Virgin America's hiring practices.

Eighteen months after the application was filed, the Department of Transportation made its initial ruling. The application was rejected. While there were a number of issues cited, the main reason involved concern about the extent to which Branson would be controlling the company.

Reid was asked if Branson ever considered becoming an American citizen to speed up the approval process, a step taken in another industry by Rupert Murdoch. In response, Reid said Branson told his fellow executives he would never be granted U.S. citizenship simply because he smoked too much marijuana.

To help win regulatory approval, the company hired lobbyists and enlisted support from numerous politicians, including then-senator Hillary Clinton, California senator Diane Feinstein, Arnold Schwarzenegger (former governor of California) and Gavin Newsom (former mayor of San Francisco).

'TEXTBOOK VIRAL MARKETING'

It also made use of the emerging field of social media. For example, Diggnation, a site popular at the time with programmers, was invited to do a live podcast from the first-class section of a Virgin America plane. Reid made a YouTube video showing off the hip interior of the company's plane. Virgin sponsored a contest to name the planes in its fleet, and received responses from all over the world. The company also registered the domain LetVAFly.com, and used it to encourage potential customers to write to their representatives in Congress, the White House and the Department of Transportation. In the end, 150,000 letters were sent.

"It was textbook viral marketing," Reid noted. Throughout the process, Reid said he kept the entire company fully appraised of everything that was going on, including the setbacks — an approach he described as crucial to maintaining morale during a rough period. "We would communicate copiously," he recalled. "While I never showed fear, I would sometimes share with everyone the fact that I was nervous."

In 2007, the company finally got the approval to launch, but only in connection with a deal in which Reid would leave his CEO position as part of a management restructuring. He did, following a 10-month transition period.

The first day of operations involved a press conference at San Francisco International beside the first Virgin America craft, dubbed "Jefferson Airplane." On hand was Grace Slick, the singer from the legendary 1960s rock group, who used some of her time at the microphone to joke that when it came to San Francisco band names, Virgin had little choice, since one of the few alternatives was the Grateful Dead.

While the airline eventually got off the ground, the delays were expensive. Reid estimates that the price tag eventually exceeded $100 million.

Since its launch, growth has been dramatic. Headquartered in the San Francisco suburb of Burlingame, Calif., Virgin America now has 3,000 staff members, operates 53 aircraft out of 23 airports, and has three million members of its frequent flyer club and a half-million Twitter followers. It is routinely rated the No. 1 U.S. airline by travel magazines such as Conde Nast.

When the Virgin team first started working, leadership compiled a list of 5,400 things that would need to be completed before the airline could launch. One by one, most of them got done.

While posting losses in its initial years, recent quarters have seen improved results. According to Reid, if those financial trends continue, the company might file for an IPO late next year. Were that to occur, it would be yet another vindication of what Reid said was Virgin America's basic philosophy of doing business: "Love your people, love your guests and show that all the time."

Beware the iSmell: 10 Rules for Successful Product Development

ENTREPRENEUR DAN COHEN IS SOMETHING OF A STUDENT of failed tech products, and at the top of his list of "dishonorable mentions" is the iSmell. The desktop device was a "personal scent synthesizer" that, when hooked up via a USB port to a computer, would deliver an olfactory experience appropriate to whatever website a user was visiting. While it sounds like a cross between a parody in The Onion and an off-color joke, the iSmell actually existed, however briefly, back in the dot-com glory days of 2001.

In presentations like the one he gave recently at a Wharton Entrepreneurs Workshop conducted at Wharton San Francisco, Cohen uses the iSmell as a humorous cautionary tale about the art and science of product management, especially for what can go wrong when the process goes off the rails.

> "There is a lot of literature out there about product management. But be careful about what you read, because you can really go off the deep end."

Product management, said Cohen, is a make-or-break issue for most start-ups; getting the product right is a foundation of future success. But he noted that the process of product development is poorly understood, with young companies often repeating common mistakes that can be easily avoided.

The field does not want for advice; there are plenty of product management how-to guides lining bookshelves, though Cohen said many of them are of dubious value. "There is a lot of literature out there about product management," he stated. "But be careful about what you read, because you can really go off the deep end."

Cohen is CEO and co-founder of Accomplio, which helps other companies bring their products to market. Before Accomplio, Cohen was involved with other web start-ups, including mySpoonful, a music site, and Pageflakes, a web page personalization service. At other points in his career, Cohen held senior positions at both Google and Yahoo.

Much of Cohen's presentation took the form of listing rules — notably, his 10 rules for success in product development. Among them: Don't confuse yourself with your customer, since your requirements for a product are probably much more sophisticated than those of the rest of the market. "Remember, it's not about you," Cohen warned, stressing the importance of keeping the focus on the customer at all times.

Other rules: Make sure you have the right business model; you don't want to have an expensive direct sales force for a low-cost product users could easily sign up for online. (That may seem obvious, but Cohen told the story of a web teleconferencing company that violated that very rule and quickly went out of business.) Don't try to design a product that you don't have the resources for, either in dollars or expertise, he noted.

And also, don't equate innovation with value. Just because a product is technically interesting, or does something never previously possible, there is no guarantee of its success in the market. (That was one of the many rules that Cohen said was broken by iSmell.)

And there is a corollary to that rule, Cohen added: Don't attempt to improve a product simply by adding more features to it, or making it more complex. More often than not, warned Cohen, such steps usually end up making the product worse.

Failed products have other things in common besides not following the rules for success. For example, they will often have a poorly planned user experience, Cohen noted, making the devices difficult to use.

A special danger for start-ups aiming products at the corporate market is to forget that the customer and the user often aren't the same person, he added. A product that is popular with users might not be as warmly received in the IT departments that are responsible for technology purchase decisions.

THE IMPORTANCE OF 'ON-BOARDING'

Cohen said that the goal for a start-up should be what he called a "minimum viable product," one that a company can introduce into the marketplace and then build on with successive versions. To do so, he urged entrepreneurs to use what has come to be known as a "lean" approach popularized in such books as The Lean Startup by Eric Ries.

In the case of product development, Cohen noted, that involves taking an "iterative" approach. First, the kernel of the product is developed. It is then tested by having potential users put the item through its paces. The results are then incorporated into revisions of the prototype, with the process repeated until the product is ready for release.

"It doesn't need to be a long and drawn out process," Cohen pointed out. "You don't need lots of studies." This customer discovery process, he added, "involves achieving the right product-solution fit. If you can't figure this out, then you should give up."

That may sound straightforward, but Cohen said there are a number of potential stumbling blocks. One of them involves testing a product with people who aren't representative of its actual potential customer base. That might happen when resource-strained start-ups rely on friends and family for testing. Not only might those people not be representative of potential customers, but they also might be unwilling to give the sort of candid feedback an entrepreneur needs, out of a desire to not hurt anyone's feelings.

Cohen stressed the importance of easy "on-boarding," which refers to the process by which a user begins to use a product, whether it's a website or a piece of software. On-boarding, he said, should be easy and intuitive. If a product has a lot of advanced or sophisticated features, designers shouldn't overwhelm users with them at the beginning, but instead, they should allow them to be discovered gradually as the product gets used.

He suggested a design philosophy of: Keep it simple, with a dagger preferred to a Swiss army knife. "Simplicity can be the biggest feature in and of itself," he said. "Don't ruin it."

NO TIME LIKE THE PRESENT

One of Cohen's themes during his talk was that there is no time like the present to create a start-up. The availability of free or low-cost web tools to help with the product development process is one of the main reasons for that being true, said Cohen. In fact, he added, the costs involved with starting a company have declined so much that venture capitalists are beginning to become concerned about what role they will play in the technology industry of the future.

"There really is a tectonic shift underway," Cohen stated. "Software has become easy and cheap to build." He added that because the barriers to entry are dropping, the marketplace will likely become increasingly crowded with competitors.

This customer discovery process "involves achieving the right product-solution fit. If you can't figure this out, then you should give up."

Cohen also discussed some of the growing number of web tools tailored for entrepreneurs.

A product called Lean Canvas, for example, provides a blueprint that lets entrepreneurs see if their overall approach is following lean principles. Balsamiq provides an easy way to create a prototype version of a software product to test it out on users, he said. Other easily available web products that Cohen recommended include Jira, which implements what has come to be called the Agile development methodology, and GitHub, a central repository for the computer code that programmers write in the process of bringing a product to market.

Cohen also noted the popularity of sites such as eLance and oDesk, which allow start-ups to hire highly trained professional help on a per-project basis, often at a fraction of what it would cost to bring on a full-time person. Some sites are highly specialized, such as uTest, which allows for crowd-sourced debugging of software code. There is even a site called FounderDating, where entrepreneurs looking to fill out a start-up team can find potential partners.

According to Cohen, the composition of the ideal start-up team starts with the CEO, who should have a strong background in product management. Also necessary, he added, are founders with extensive know-how in technology and user experience. If not all of those boxes can be checked right away, he noted, members of the founding team may need to serve dual roles on an interim basis until a spot can be filled full-time.

“Apple is a unique and rare case, one that is very hard to duplicate.”

Examples that Cohen gave of companies that did everything right include Mint, which has become popular for personal finance and was acquired by Quicken, and Dropbox, the file sharing site. Cohen admitted to being a huge fan of Dropbox, calling it a “massively successful lean product” and praising the company for not making it more complex as the service became more popular. “I respect those guys a lot,” he said.

While describing the lists of dos and don’ts that entrepreneurs should follow, Cohen also noted the irony of the fact that some of the most successful entrepreneurs have been those who broke all the rules. The paradigmatic example, he said, was Steve Jobs.

Apple, noted Cohen, never did any of the things it was “supposed” to: It didn’t listen to customers, and it introduced finished products all at once, rather than gradually releasing revised versions. But Cohen added that in addition to the presence of Steve Jobs, Apple also had resources that most start-ups lack, like a hefty marketing budget that allowed the company to nearly bury the country in billboards promoting products like the iPod and the iPad.

Said Cohen, “Apple is a unique and rare case, one that is very hard to duplicate.”

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