The Future of Web Startups

October 2007(This essay is derived from a keynote at FOWA in October 2007.)There's something interesting happening right now. Startups are  
undergoing the same transformation that technology does when it becomes  
cheaper.It's a pattern we see over and over in technology. Initially  
there's some device that's very expensive and made  
in small quantities. Then someone discovers how to make them cheaply;   
many more get built; and as a result they can be used in new ways.Computers are a familiar example. When I was a kid, computers were  
big, expensive machines built one at a time. Now they're a commodity.  
Now we can stick computers in everything.This pattern is very old. Most of the turning  
points in economic history are instances of it. It happened to  
steel in the 1850s, and to power in the 1780s.  
It happened to cloth manufacture in the thirteenth century, generating  
the wealth that later brought about the Renaissance. Agriculture  
itself was an instance of this pattern.Now as well as being produced by startups, this pattern  
is happening to startups. It's so cheap to start web startups  
that orders of magnitudes more will be started. If the pattern  
holds true, that should cause dramatic changes.1. Lots of StartupsSo my first prediction about the future of web startups is pretty  
straightforward: there will be a lot of them. When starting a  
startup was expensive, you had to get the permission of investors  
to do it. Now the only threshold is courage.Even that threshold is getting lower, as people watch others take  
the plunge and survive. In the last batch of startups we funded,  
we had several founders who said they'd thought of applying before,  
but weren't sure and got jobs instead. It was only after hearing  
reports of friends who'd done it that they decided to try it  
themselves.Starting a startup is hard, but having a 9 to 5 job is hard too,  
and in some ways a worse kind of hard. In a startup you have lots  
of worries, but you don't have that feeling that your life is flying  
by like you do in a big company. Plus in a startup you could make  
much more money.As word spreads that startups work, the number may grow  
to a point that would now seem surprising.We now think of it as normal to have a job at a company, but this  
is the thinnest of historical veneers. Just two or three  
lifetimes ago, most people in what are now called industrialized  
countries lived by farming. So while it may seem surprising to  
propose that large numbers of people will change the way they make  
a living, it would be more surprising if they didn't.2. StandardizationWhen technology makes something dramatically cheaper, standardization  
always follows. When you make things in large volumes you tend  
to standardize everything that doesn't need to change.At Y Combinator we still only have four people, so we try to  
standardize everything. We could hire employees, but we want to be  
forced to figure out how to scale investing.We often tell startups to release a minimal version one quickly,   
then let the needs of the users determine what to do  
next. In essense, let the market design the product. We've  
done the same thing ourselves. We think of the techniques we're  
developing for dealing with large numbers of startups as like  
software. Sometimes it literally is software, like   
Hacker News and  
our application system.One of the most important things we've been working on standardizing  
are investment terms. Till now investment terms have been  
individually negotiated.  
This is a problem for founders, because it makes raising money  
take longer and cost more in legal fees. So as well as using the  
same paperwork for every deal we do, we've commissioned generic  
angel paperwork that all the startups we fund can use for future  
rounds.Some investors will still want to cook up their own deal terms.  
Series A rounds, where you raise a million dollars or more, will  
be custom deals for the forseeable future. But I think angel rounds  
will start to be done mostly with standardized agreements. An angel  
who wants to insert a bunch of complicated terms into the agreement  
is probably not one you want anyway.3. New Attitude to AcquisitionAnother thing I see starting to get standardized is acquisitions.  
As the volume of startups increases, big companies will start to  
develop standardized procedures that make acquisitions little  
more work than hiring someone.Google is the leader here, as in so many areas of technology. They  
buy a lot of startups— more than most people realize, because they  
only announce a fraction of them. And being Google, they're  
figuring out how to do it efficiently.One problem they've solved is how to think about acquisitions. For  
most companies, acquisitions still carry some stigma of inadequacy.  
Companies do them because they have to, but there's usually some  
feeling they shouldn't have to—that their own programmers should  
be able to build everything they need.Google's example should cure the rest of the world of this idea.  
Google has by far the best programmers of any public technology  
company. If they don't have a problem doing acquisitions, the  
others should have even less problem. However many Google does,  
Microsoft should do ten times as many.One reason Google doesn't have a problem with acquisitions  
is that they know first-hand the quality of the people they can get  
that way. Larry and Sergey only started Google after making the  
rounds of the search engines trying to sell their idea and finding  
no takers. They've been the guys coming in to visit the big  
company, so they know who might be sitting across that conference  
table from them.4. Riskier Strategies are PossibleRisk is always proportionate to reward. The way to get really big  
returns is to do things that seem crazy, like starting a new search  
engine in 1998, or turning down a billion dollar acquisition offer.This has traditionally been a problem in venture funding. Founders  
and investors have different attitudes to risk. Knowing that risk  
is on average proportionate to reward, investors like risky strategies,  
while founders, who don't have a big enough sample size to care  
what's true on average, tend to be more conservative.If startups are easy to start, this conflict goes away, because  
founders can start them younger, when it's rational to take more  
risk, and can start more startups total in their careers. When  
founders can do lots of startups, they can start to look at the  
world in the same portfolio-optimizing way as investors. And that  
means the overall amount of wealth created can be greater, because  
strategies can be riskier.5. Younger, Nerdier FoundersIf startups become a cheap commodity, more people will be able to  
have them, just as more people could have computers once microprocessors  
made them cheap. And in particular, younger and more technical  
founders will be able to start startups than could before.Back when it cost a lot to start a startup, you had to convince  
investors to let you do it. And that required very different skills  
from actually doing the startup. If investors were perfect judges,  
the two would require exactly the same skills. But unfortunately  
most investors are terrible judges. I know because I see behind  
the scenes what an enormous amount of work it takes to raise money,  
and the amount of selling required in an industry is always inversely  
proportional to the judgement of the buyers.Fortunately, if startups get cheaper to start, there's another way  
to convince investors. Instead of going to venture capitalists  
with a business plan and trying to convince them to fund it, you  
can get a product launched on a few tens of thousands of dollars  
of seed money from us or your uncle, and approach them with a  
working company instead of a plan for one. Then instead of  
having to seem smooth and confident, you can just point them to  
Alexa.This way of convincing investors is better suited to hackers, who  
often went into technology in part because they felt uncomfortable  
with the amount of fakeness required in other fields.6. Startup Hubs Will PersistIt might seem that if startups get cheap to start, it will mean the  
end of startup hubs like Silicon Valley. If all you need to start  
a startup is rent money, you should be able to do it anywhere.This is kind of true and kind of false. It's true that you can now  
start a startup anywhere. But you have to do more with a  
startup than just start it. You have to make it succeed. And that  
is more likely to happen in a startup hub.I've thought a lot about this question, and it seems to me the  
increasing cheapness of web startups will if anything increase the  
importance of startup hubs. The value of startup hubs, like centers  
for any kind of business, lies in something very old-fashioned:  
face to face meetings. No technology in the immediate future will  
replace walking down University Ave and running into a friend who  
tells you how to fix a bug that's been bothering you all weekend,  
or visiting a friend's startup down the street and ending up in a  
conversation with one of their investors.The question of whether to be in a startup hub is like the question  
of whether to take outside investment. The question is not whether  
you need it, but whether it brings any advantage at all.  
Because anything that brings an advantage will give your competitors  
an advantage over you if they do it and you don't. So if you hear  
someone saying "we don't need to be in Silicon Valley," that use  
of the word "need" is a sign they're not even thinking about the  
question right.And while startup hubs are as powerful magnets as ever, the increasing  
cheapness of starting a startup means the particles they're attracting  
are getting lighter. A startup now can be just a pair of 22 year  
old guys. A company like that can move much more easily than one  
with 10 people, half of whom have kids.We know because we make people move for Y Combinator, and it doesn't  
seem to be a problem. The advantage of being able to work together  
face to face for three months outweighs the inconvenience of moving.  
Ask anyone who's done it.The mobility of seed-stage startups means that seed funding is a  
national business. One of the most common emails we get is from  
people asking if we can help them set up a local clone of Y Combinator.  
But this just wouldn't work. Seed funding isn't regional, just as  
big research universities aren't.Is seed funding not merely national, but international? Interesting  
question. There are signs it may be. We've had an ongoing  
stream of founders from outside the US, and they tend to do  
particularly well, because they're all people who were so determined  
to succeed that they were willing to move to another country to do  
it.The more mobile startups get, the harder it would be to start new   
silicon valleys. If startups are mobile, the best local talent   
will go to the real Silicon Valley,  
and all they'll get at the local one will be the people who didn't  
have the energy to move.This is not a nationalistic idea, incidentally. It's cities that  
compete, not countries. Atlanta is just as hosed as Munich.7. Better Judgement NeededIf the number of startups increases dramatically, then the people  
whose job is to judge them are going to have to get better at  
it. I'm thinking particularly of investors and acquirers. We now  
get on the order of 1000 applications a year. What are we going  
to do if we get 10,000?That's actually an alarming idea. But we'll figure out some kind  
of answer. We'll have to. It will probably involve writing some  
software, but fortunately we can do that.Acquirers will also have to get better at picking winners.   
They generally do better than investors, because they pick  
later, when there's more performance to measure. But even at the  
most advanced acquirers, identifying companies to  
buy is extremely ad hoc, and completing the acquisition often  
involves a great deal of unneccessary friction.I think acquirers may eventually have chief acquisition officers  
who will both identify good acquisitions and make the deals happen.  
At the moment those two functions are separate. Promising new  
startups are often discovered by developers. If someone powerful  
enough wants to buy them, the deal is handed over to corp dev guys  
to negotiate. It would be better if both were combined in  
one group, headed by someone with a technical background and some  
vision of what they wanted to accomplish. Maybe in the future big  
companies will have both a VP of Engineering responsible for  
technology developed in-house, and a CAO responsible for bringing  
technology in from outside.At the moment, there is no one within big companies who gets in  
trouble when they buy a startup for $200 million that they could  
have bought earlier for $20 million. There should start to be  
someone who gets in trouble for that.8. College Will ChangeIf the best hackers start their own companies after college  
instead of getting jobs, that will change what happens in college.  
Most of these changes will be for the better. I think the experience  
of college is warped in a bad way by the expectation that afterward  
you'll be judged by potential employers.One change will be in the meaning of "after  
college," which will switch from when one graduates from college  
to when one leaves it. If you're starting your own company, why  
do you need a degree? We don't encourage people to start startups  
during college, but the best founders are certainly  
capable of it. Some of the most successful companies we've funded  
were started by undergrads.I grew up in a time where college degrees seemed really important,  
so I'm alarmed to be saying things like this, but there's nothing  
magical about a degree. There's nothing that magically changes  
after you take that last exam. The importance of degrees is due  
solely to the administrative needs of large organizations. These  
can certainly affect your life—it's hard to get into grad  
school, or to get a work visa in the US, without an undergraduate  
degree—but tests like this will matter less and  
less.As well as mattering less whether students get degrees, it will  
also start to matter less where they go to college. In a startup  
you're judged by users, and they don't care where you went to  
college. So in a world of startups, elite universities will play  
less of a role as gatekeepers. In the US it's a national scandal  
how easily children of rich parents game college admissions.  
But the way this problem ultimately gets solved may not be by  
reforming the universities but by going around them. We in the  
technology world are used to that sort of solution: you don't beat  
the incumbents; you redefine the problem to make them irrelevant.The greatest value of universities is not the brand name or perhaps  
even the classes so much as the people you meet. If  
it becomes common to start a startup after college, students may start  
trying to maximize this. Instead of focusing on getting  
internships at companies they want to work for, they may start  
to focus on working with other students they want as cofounders.What students do in their classes will change too. Instead of  
trying to get good grades to impress future employers, students  
will try to learn things. We're talking about some pretty dramatic  
changes here.9. Lots of CompetitorsIf it gets easier to start a startup, it's easier for competitors too.   
That doesn't erase the advantage of  
increased cheapness, however. You're not all playing a zero-sum  
game. There's not some fixed number of startups that can succeed,  
regardless of how many are started.In fact, I don't think there's any limit to the number of startups  
that could succeed. Startups succeed by creating wealth, which is  
the satisfaction of people's desires. And people's desires seem  
to be effectively infinite, at least in the short term.What the increasing number of startups does mean is that you won't  
be able to sit on a good idea. Other people have your idea, and  
they'll be increasingly likely to do something about it.10. Faster AdvancesThere's a good side to that, at least for consumers of  
technology. If people get right to work implementing ideas instead  
of sitting on them, technology will evolve faster.Some kinds of innovations happen a company at a time, like the  
punctuated equilibrium model of evolution. There are some kinds  
of ideas that are so threatening that it's hard for big companies  
even to think of them. Look at what a hard time Microsoft is  
having discovering web apps. They're like a character in a movie  
that everyone in the audience can see something bad is about to  
happen to, but who can't see it himself. The big innovations  
that happen a company at a time will obviously happen faster if  
the rate of new companies increases.But in fact there will be a double speed increase. People won't  
wait as long to act on new ideas, but also those ideas will  
increasingly be developed within startups rather than big companies.  
Which means technology will evolve faster per company as well.Big companies are just not a good place to make things happen fast.  
I talked recently to a founder whose startup had been acquired by  
a big company. He was a precise sort of guy, so he'd measured their  
productivity before and after. He counted lines of code, which can  
be a dubious measure, but in this case was meaningful because it  
was the same group of programmers. He found they were one thirteenth  
as productive after the acquisition.The company that bought them was not a particularly stupid one.  
I think what he was measuring was mostly the cost of bigness. I  
experienced this myself, and his number sounds about right. There's  
something about big companies that just sucks the energy out of  
you.Imagine what all that energy could do if it were put to use. There  
is an enormous latent capacity in the world's hackers that most  
people don't even realize is there. That's the main reason we do  
Y Combinator: to let loose all this energy by making it easy for  
hackers to start their own startups.A Series of TubesThe process of starting startups is currently like the plumbing in  
an old house. The pipes are narrow and twisty, and there are leaks  
in every joint. In the future this mess will gradually be replaced  
by a single, huge pipe. The water will still have to get from A  
to B, but it will get there faster and without the risk of spraying  
out through some random leak.This will change a lot of things for the better. In a big, straight  
pipe like that, the force of being measured by one's performance  
will propagate back through the whole system. Performance is always  
the ultimate test, but there are so many kinks in the plumbing now  
that most people are insulated from it most of the time. So you  
end up with a world in which high school students think they need  
to get good grades to get into elite colleges, and college students  
think they need to get good grades to impress employers, within  
which the employees waste most of their time in political battles,  
and from which consumers have to buy anyway because there are so  
few choices. Imagine if that sequence became a big, straight pipe.  
Then the effects of being measured by performance would propagate  
all the way back to high school, flushing out all the arbitrary  
stuff people are measured by now. That is the future of web startups.Thanks to Brian Oberkirch and Simon Willison for inviting me to   
speak, and the crew at Carson Systems for making everything run smoothly.