# Requests for Startups

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## Introduction

## There are a lot of startup ideas we've been waiting for people to apply with, sometimes for years. In an effort to be more direct, we're introducing the RFS (Requests for Startups).

You shouldn't start a company just because it's on this list. 1. It's mostly here to help stimulate you to think about ideas.

We don't expect responses to RFSes will ever be more than a fraction of the applications we accept. We wouldn't want them to be. Most good ideas should be ones that surprise us, not ones we're waiting for.

Our hope is that someone already working on a company in one of these areas will consider applying to YC.

Many of these areas fall into the "breakthrough technology" category, but the great majority of the startups we fund will continue to be the sort of Internet and mobile companies we've funded in the past, so if that's what you wanted to do before this post, keep doing it. Traditional-looking startups like Google and Facebook are obviously as important as any company one could imagine, and clearly are breakthrough technologies themselves.

Here is a list (we'll add to it over time) of some areas we're particularly interested in. More generally, we'll pay attention to any area where technology can make the world much better.

## Energy

### There is a remarkable correlation between the cost of energy and quality of life.

Throughout history, when the cost of energy has come down a lot (for example, with the steam engine) the quality of life has drastically improved.

Cheap energy would do a huge amount to reduce poverty. New energy sources could also help the environment, the economy, reduce war, ensure a stable future, make food and water more abundant, and much more.

We believe economics will dominate - new sources must be cheaper than old ones, without subsidies, and be able to scale to global demand. Nuclear energy can hit the bid, and possibly so can renewables. But pricing is the first order question.

In addition to generation, we're also interested in energy storage and transmission. 10x better batteries would enable great new things, as would the ability to easily move energy around.

## A.I.

### Relative to the potential impact, it doesn't seem like enough smart people are working on this.

A lot of smart people talk about AI with a combination of awe and fear, both for good reasons. But it feels like it could be one of the dividing lines in the history of technology, where before and after look totally different.

## Robotics

### Robots will be a major way we get things done in the physical world.

Our definition is pretty broad--for example, we count a self-driving car as a robot. Robots are how we'll likely explore space and maybe even the human body.

### It's still early, but it seems like we're finally making real progress hacking biology.

There are so many directions this can go--fighting disease, slowing aging, merging humans and computers, downloading memories, genetic programming, etc. We are certain that this is going to be a surprising, powerful and controversial field over the next several decades. It feels a little bit like microcomputers in the 1970s.

Reading DNA has become incredibly fast and cheap. There are many interesting applications here. There are perhaps even more interesting applications as we get better at writing DNA.

We are especially interested in applications of biotech to prevent its own misuses. For example, if the bad guys can create new infectious diseases quickly, it'd be nice if the good guys could create new cures and vaccines quickly as well.

## Healthcare

## Healthcare in the United States is badly broken. We are getting close to spending 20% of our GDP on healthcare; this is unsustainable.

We're interested in ways to make healthcare better for less money, not in companies that are able to exploit the system by overcharging. We're especially interested in preventative healthcare, as this is probably the highest-leverage way to improve health. Sensors and data are interesting in lots of different areas, but especially for healthcare.

Medical devices also seem like fertile ground for startups.

## Pharmaceuticals

## Drug development has gotten slower and more expensive.

We'd like to fund companies doing this in new ways. We take a broad view of this--we're interested in things that may not become prescription drugs but still really help people. Areas like nootropics seem underexplored.

## Food & Water

## At some point, we are going to have problems with food and water availability.

Technology can almost certainly improve this. Great innovations are possible--we will need another advancement on the scale of what Norman Borlaug did.

## Education

## If we can fix education, we can eventually do everything else on this list.

The first attempts to use technology to fix education have focused on using the Internet to distribute traditional content to a wider audience. This is good, but the Internet is a fundamentally different medium and capable of much more.

Solutions that combine the mass scale of technology with one-on-one in-person interaction are particularly interesting to us.

This may not require a "breakthrough" technology in the classical sense, but at a minimum it will require very new ways of doing things.

## Internet Infrastructure

### We can't imagine life without the Internet. We need to be sure it keeps working--this includes everything from security to free and open communication to infrastructure.

The Internet is a transformative power, and we're particularly interested in applications that transform the big underpinnings of society (bitcoin is a great example!).

The Internet lets people around the world coordinate action--there are almost certainly important businesses to be built around this concept.

An important trend is the API-ification of everything. As more and more businesses are accessible with a web API, the Internet becomes more and more powerful.

## Government

### Very few startups write software for government.

But the government is a very large customer with very bad software.

In addition to better software for existing processes, we're also interested in how the Internet can enable new categories, like crowdfunding for social services.

## Human Augmentation

### We like companies that try to augment humans.

This is a very general category because there are a lot of different ways to do this. Biotech can help us live longer and be smarter. Robots can help us do physical things we otherwise couldn't. Software can help us focus on simple actions that make us happier and help large groups of us organize ourselves better. And on and on and on.

## VR and AR

### Virtual reality and augmented reality have been a long-unfulfilled promise.

But we feel the wave is coming, and this is the right time to start working on it.

## Science

### Science seems broken. The current funding models are broken and favor political skill over scientific genius.

We need new business models for basic research. There are a lot of areas where scientific developments can have huge commercial applications--materials, neuroscience, climate engineering, and cheaper/better ways to get to space, just to name a few--and we'd love to figure out a way for it to happen. Bell Labs worked a long time ago but would probably not work in today's world.

## Transportation & Housing

## About half of all energy is used on transportation, and people spend a huge amount of time unhappily commuting.

Face-to-face interaction is still really important; people still need to move around. And housing continues to get more expensive, partially due to difficulties in transportation. We're interested in better ways for people to live somewhere nice, work together, and have easier commutes.

Specifically, lightweight, short-distance personal transportation is something we're interested in.

## One Million Jobs

## We want to fund companies that have the potential to create a million jobs.

There are a lot of areas where it makes sense to divide labor between humans and computers-—we are very good at some things computers are terrible at and vice versa—-and some of these require huge amounts of human resources.

This is both good for the world and likely a good business strategy—-as existing jobs go away, a company that creates a lot of new jobs should be able to get a lot of talented people.

## Programming Tools

## Software developers are shaping more and more of our daily lives. The products they use to make software are a powerful lever: they have a dramatic impact on the quality and kind of software being built.

We're interested in helping developers create better software, faster. This includes new ways to write, understand, and collaborate on code, and the next generation of tools and infrastructure for delivering software continuously and reliably.

We believe it's especially important to build products that make software development accessible to the widest part of our society. In fact, we're especially interested in new ways to program. There are probably much better ways for people to program, and figuring one out would have a huge impact.

The frameworks are better, the languages a bit more clever, but mostly we're doing the same things.

One way to think about this is: what comes after programming languages?

## Hollywood 2.0

### New celebrities don't get discovered by talent agents, they get discovered directly by their fans on YouTube.

In 2014, movies had their worst summer since 1997. Just like future celebrities are unlikely to get their start with talent agencies, future content consumers will watch content online instead of at the theater, and probably in very different ways.

Celebrities now have direct relationships with their fans. They can also distribute content in new ways.

There are almost certainly huge new businesses that will get built as part of this shift.

## Diversity

### A diverse workforce is good for business and good for the world.

Without different perspectives, the products and services we create will miss big opportunities for large segments of people. We want to fund non-profits and startups that are working on making technology a place that is more inclusive and attractive to people of all ages, races, sexual orientations, and cultures.

## Developing Countries

### Hundreds of millions of people around the world are getting their first computing experience (a smart phone) and entering the middle class.

Increasing numbers of tomorrow's multi-billion dollar technology companies will focus on serving these new consumers, particularly in China, India and South East Asia. Entrepreneurs focused on these markets will almost certainly be riding a big wave, as GDP growth in these countries continues to outpace growth in the United States.

Building companies in many of these markets is difficult as shipping and payments infrastructure often doesn't exist yet. On the positive side, that means vertically integrated businesses are a big opportunity.

## Enterprise Software

### Software used by large companies is still awful and still very lucrative.

Category-defining enterprise software companies will emerge to solve problems for every vertical, every business size, and every job function. Here are 3 specific areas we think are particularly interesting:

1. **Making The Expensive Cheap**: Because of the cost of traditional enterprise software, many categories of solutions were previously cost prohibitive for small or even medium sized businesses to benefit from.
2. **The Next Billion Workers**: Traditionally office-based knowledge workers have been the users of enterprise software. Mobile phones and tablets turn every type of employee -- from the retail store associate to the field services team -- into a knowledge worker.
3. **Digitizing Every Industry**: Every industry is going through some form of information-based disruption; this is causing businesses to modernize their practices, leveraging new data, accelerating key processes, and delivering digitally-enabled experiences in the process.

## Financial Services

### Saving money is hard and Americans are particularly bad at it. Because the personal savings rate has largely been falling since the early 80s, we don't have sufficient cushions to face economic shocks, weather unexpected unemployment, or even enjoy our retirements.

Its simply too hard to find good ways to save or to invest. Savings accounts only pay a fraction of what's needed to keep up with inflation. Picking individual stocks and bonds exposes investors to huge volatility and does nothing to guarantee a return.

While investors can dampen their volatility through various exchanges or closed ended funds, the reality is that few have the expertise needed to properly mix those funds, rebalance them, and optimize them for taxes to capture the best possible return (no matter how you define that) given each dollar of invested capital. Even if investors were able to pick optimal investment strategies, they'd find that that fees are a huge drag on performance.

This seems to us like something software should help solve. We'd like to see teams tackling each of the component issues around saving and investing, along with ones tackling the entire package.

## Telecommunications

## Skype changed the world, yet it's only gotten worse with every passing year.

Despite broadband penetration, we still have lackluster tools for even the most basic of telecommunication. We deserve a simpler, more elegant solution for a more civilized age.

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