SpencerStuart

THE 10 INNOVATION SECRETS OF GOOGLE

"The core message on innovation is that there is no one thing that you do. There are a set of things, reinforced by the culture of the company, that enable and empower innovation. People often ask, 'what's the one thing I can do?' or they say 'we're going to set up an innovation team' or 'I'm going to hire a chief innovation officer.' When I hear that I think — you're never going to get there; that's not how it works."

Jeff Huber, senior vice president at Google X, shares the his top 10 innovation tips.

1. Have a mission people understand and care about

Google's mission is to organize the world's information and make it universally accessible and useful. It's a mission that has stood the test of time for the last 15 years — it provides a purpose and a reason for people being here and makes it much more than a job. Talking to somebody who is potentially coming into the organization about the mission and its implications is a great deal more exciting than talking to them about the other places they're considering, where the 'mission' is a lifeless metric like 'deliver superior EBITDA performance for shareholders'.

People are here because they care about that mission and making it happen. Interestingly, the way people have interpreted that mission has evolved as the company has moved from a simple search engine to Gmail (a gigabyte of storage and the ability instantly to search all incoming information and communications) to Google Maps and Google Earth. It was all about bringing the technology that Google had applied to solving the search space to new problems that were 100 percent consistent with the mission. At the same time it expanded people's view of what Google was.

2. Start with the user

More specifically, start with their problems. It's very hard for people to relate to experiences they haven't seen, touched or felt yet, so instead of asking them what they want, you really have to understand and solve the underlying problems. As Henry Ford said: "If I had asked people what they wanted, they would have said a faster horse."

3. People matter; build a meritocracy

Google has a model of hiring generalists, not specialists and favoring intelligence and initiative over experience. Our business evolves so fast that if we hire narrow specialists to be the perfect person for this job today, soon the situation will be completely different. We want to hire super-smart generalists who are problem-solvers and great athletes who can move from one challenge to another. Our performance evaluation model is very peer-based and helps us understand who is doing the hard work, who is having an impact. Promotion decisions are also peer-based and this tends to recognize and reward the people who are having the greatest impact on the organization.

4. Be transparent and data based

We believe in data for decision-making. Now that you have smart people who are taking initiative, you have to give them the tools that they need to do their jobs — and at Google those tools are data. We have a model that is very open and transparent around data. We have an intranet where everything is available, every project in the company, what people are working on, the goals and objectives of those projects and the metrics around them. Everything is open and transparent and there is no data hiding or controlling of data to give teams or people power.

If you have an open model getting data is very straightforward so we encourage experimenting instead of somebody saying 'I think.' As an example, whereas for a lot of companies it's now the vogue to do experiments with 5 percent or 10 percent traffic coming to a website or a mobile app, Google's figure is 100 percent. We have designed and structured the experiments so that they're continuously overlapping. Anytime you're using our products you are part of an experiment. Instead of saying what you want, you are proving it by your actions.

5. Small teams that demo and iterate

There is a saying that the difference between a good engineer and a great engineer is 10x: a great engineer can do ten times what a good engineer can do. The reality is that it's more like 300x or 500x or 1000x. With the right engineers, with the right team, you can do things that just weren't possible before. If you look at some of the very core things that Google does, shockingly small teams were responsible. The first Gmail product was built by a five-person team. The core ad system that drives 95 percent of Google's revenues was a 15- to 20-person team; it's expanded some now, but it's still shockingly small for the kind of impact that they have. And when you've got a bunch of smart people the emphasis shifts from ideas being valued to execution being valued, so the currency of innovation at Google is demos. Turn your idea into something, show other people it's possible, get people excited about it and then iterate very fast.

Google X

What we are trying to create at Google is a radical model of innovation which we call moonshots: breakthrough technologies that have a massive impact on the world. Our definition of a moonshot involves the intersection of three things: 1) We identify a huge problem, something that if we get it right will affect more than a billion people in the world. 2) We want to come up with a radical solution to the problem, a very different approach to the way people have been thinking about it previously. 3) We want to create or deploy breakthrough technology.

The slot we're trying to solve with Google X is the middle ground of five to ten years out — things that you could just imagine being possible. You don't see businesses reaching for them and you don't see the really applied part of academia going after them either. We felt this was our sweet spot. There are four projects that fit Google X model that we can talk about publicly:

Self-driving cars

THE PROBLEM: over a million people every year are killed in auto accidents, mostly needlessly. What's more, the average car is utilized only about four percent of the time.

THE RADICAL SOLUTION: instead of humans driving cars, we should have the cars drive themselves.

THE BREAKTHROUGH TECHNOLOGY: building on the kind of data we have in Google Maps, adding in real-time sensor capabilities to vehicles so that they can see, navigate and respond in real time.

Google Glass

THE PROBLEM: Technology gets in the way; the camera is never ready when you need it.

THE SOLUTION: The wearable camera enabling speed and spontaneity

THE BREAKTHROUGH TECHNOLOGY: a sophisticated device using entirely new optics and new models of miniaturization, continuously connected to the Internet

Project Loon

THE PROBLEM: Two-thirds of the world's population still doesn't have Internet access because of geographic location or price point.

THE SOLUTION: Balloon-based Internet access for the world.

THE BREAKTHROUGH TECHNOLOGY: Replicate satellites' properties of universal visibility and access, placing the technology eight to ten miles in the sky at a fraction of the cost.

6. 20 percent time

This is our model for creating bottom-up innovation, letting people take up 20 percent of their time to pursue their passions. Some people will use it as they go, some bank up time to spend concentrated periods of weeks. If you look at the history of the innovation of Google, probably about half of our products have come through 20 percent time. Google News originated from an engineer who was an international news enthusiast who spent the first half-hour of his day going to 10–15 different international newspapers and thought 'computers should be able to do this for me.' Gmail started as a 20 percent time project for an engineer who couldn't find the presentation somebody sent him last week and it seemed crazy that that was possible. So it's letting go the mindset that all innovation is going to be top-down, that it's going to come from a small group of smart people who know everything; instead, have faith that it can and will happen bottom-up.

7. Apply a portfolio model

70 percent of our resources are allocated to the core business (Search and Ads); 20 percent to adjacent things (e.g. Google Apps); and 10 percent is a crazy exploration of new things. Google X is the embodiment of that. One of the reasons that we took the step of officially creating Google X was that we found that historically people weren't stretching enough. It was hard to get people to extend when they were looking at their core objectives and think five or ten years out. Google X is the model for making sure that we're putting enough bets on the future.

8. Set high expectations, but measure progress

Whenever a team goes in for a discussion with the Google founders with something that they think is incredibly ambitious with a huge potential impact, the feedback inevitably is, 'you're not thinking nearly big enough. What is the thing, if we do it, that will affect a billion people, that will change the world?' That continually raises people's expectations, makes them think bigger, makes them think about the full implications. We have crystallized that into what we call the 10x bar: when we are thinking about the radical solution, the breakthrough technology for how to solve the big problems, it has to at least be ten times better than anything that's available today because it's so hard to create new things. If you're aiming for 20 percent or 30 percent better than what exists today, you're probably competing in an existing space against somebody who knows what they're doing. So by the time you make the 20 percent or 30 percent improvement, there's a good chance they'll already be there. But if you are thinking about things that are 10x better then you are having to think about all new solutions; you are thinking about solving things in different ways. If you want to create a car that goes 50 miles to the gallon, you are best off starting with a car that goes 30 or 40; if you want a car that goes 500 miles to the gallon, then you need to think about it in a completely different way.

9. Provide a platform for others to innovate

How do we leverage the collective innovation of the world? In Google we have approximately 5,000 developers, and we try to have the best and smartest ones that you can possibly find. However, that's a tiny fraction of the total brain power and innovation potential in the world. So instead of us having products for people to use, we try to create platforms for other people to build and innovate on, things like Google Maps and Google Earth. When there are hundreds of thousands of developers who are building on it, it has a massive magnifier effect. Similarly, Android has a half million developers who have driven 50 billion app downloads. If we had simply looked at these ideas as products, they wouldn't be having that kind of impact on the world.

10. Set the expectation that innovation is the rule, not the exception

Where there is innovation, celebrate it! By creating expectation across the organization, you find innovation in places that you would not have imagined, or in areas where other companies are expected to innovate. For example, our finance team experimented and innovated with the Google IPO auction model which had a very different take. It was initially treated with some suspicion, but eventually worked out fine. The same team created a model of transferable stock options, increasing the value of everyone in the company's stock options by about 25 percent by creating a secondary marketplace for reselling; people could get value out of the full life of the option instead of just exercising at a given point. Another example would be the operations team thinking about how we build data centers. Instead of buying commercial computers and putting them in a commercial data center like everyone else was doing at the time, they thought from the ground up about how to do this differently and better. As a result, we built our own servers and data centers, which now provides a huge cost and performance advantage compared to anyone else.

Jeff Huber is senior vice president at Google X. During his 10 years at Google, he built Google's advertising systems and Google Apps. Most recently he ran Google Maps, which has over a billion users. Google X embodies a radical model of innovation where 'moonshot' projects enable radical solutions powered by breakthrough technologies to solve huge problems affecting at least a billion or more people.

Read Jeff Huber's thoughts on the future of digital in a special digital-themed issue of Spencer Stuart's *Point of View.*

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