
The Eight Pillars of Innovation



Susan Wojcicki, Senior Vice President of Advertising, offers a Google-eye view on how to stay creative.

WORDS BY *Susan Wojcicki*

ILLUSTRATION BY *Robert Samuel Hanson*

The greatest innovations are the ones we take for granted, like light bulbs, refrigeration and penicillin. But in a world where the miraculous very quickly becomes common-place, how can a company, especially one as big as Google, maintain a spirit of innovation year after year? ➔

Nurturing a culture that allows for innovation is the key. As we've grown to over 26,000 employees in more than 60 offices, we've worked hard to maintain the unique spirit that characterized Google way back when I joined as employee #16.

At that time I was Head of Marketing (a group of one), and over the past decade I've been lucky enough to work on a wide range of products. Some were big wins, others weren't. Although much has changed through the years, I believe our commitment to innovation and risk has remained constant.

What's different is that, even as we dream up what's next, we face the classic innovator's dilemma: should we invest in brand new products, or should we improve existing ones? We believe in doing both, and learning while we do it. Here are eight principles of innovation we've picked up along the way to guide us as we go.



Have_a_mission_that_matters

Work can be more than a job when it stands for something you care about. Google's mission is to 'organize the world's information and make it universally accessible and useful.' We use this simple statement to guide all of our decisions.

When we start work in a new area, it's often because we see an important issue that hasn't been solved and we're confident that technology can make a difference. For example, Gmail was created to address the need for more web email functionality, great search and more storage.

Our mission is one that has the potential to touch many lives, and we make sure that all our employees feel connected to it and empowered to help achieve it. In times of crisis, they have helped by organizing life-saving information and making it readily available. The dedicated Googlers who launched our Person Finder tool (see page 17) within two hours of the earthquake and tsunami in Japan this March are a wonderful recent example of that commitment.



Think_big_but_start_small

No matter how ambitious the plan, you have to roll up your sleeves and start somewhere. Google Books, which has brought the content of millions of books online, was an idea that our founder, Larry Page, had for a long time. People thought it was too crazy even to try, but he went ahead and bought a scanner and hooked it up in his office.

He began scanning pages, timed how long it took with a metronome, ran the numbers and realized it would be possible to bring the world's books online. Today, our Book Search index contains over 10 million books.

Similarly, AdSense, which delivers contextual ads to websites, started when one engineer put ads in Gmail. We realized that with more sophisticated technology we could do an even better job by devoting additional resources to this tiny project. Today, AdSense ads reach 80 percent of global internet users – it is the world's largest ad network – and we have hundreds of thousands of publishers worldwide.



Strive_for_continual_innovation,_not_instant_perfection

The best part of working on the web? We get do-overs. Lots of them. The first version of AdWords, released in 1999, wasn't very successful – almost no one clicked on the ads. Not many people remember that because we kept iterating and eventually reached the model we have today. And we're still improving it; every year we run tens ➡

of thousands of search and ads quality experiments, and over the past year we've launched over a dozen new formats. Some products we update every day.

Our iterative process often teaches us invaluable lessons. Watching users 'in the wild' as they use our products is the best way to find out what works, then we can act on that feedback. It's much better to learn these things early and be able to respond than to go too far down the wrong path.

Iterating has served us well. We weren't first to Search, but we were able to make progress in the market by working quickly, learning faster and taking our next steps based on data.



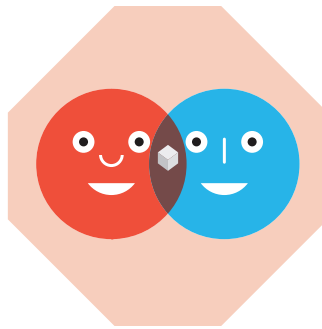
Look_for_ideas_everywhere

As the leader of our Ads products, I want to hear ideas from everyone – and that includes our partners, advertisers and all of the people on my team. I also want to be a part of the conversations Googlers are having in the hallways.

Several years ago, we took this quite literally and posted an ideas board on a wall at Google's headquarters in Mountain View. On a Friday night, an

engineer went to the board and wrote down the details of a convoluted problem we had with our ads system. A group of Googlers lacking exciting plans for the evening began re-writing the algorithm within hours and had solved the problem by Tuesday.

Some of the best ideas at Google are sparked just like that – when small groups of Googlers take a break on a random afternoon and start talking about things that excite them. The Google Art Project, which brought thousands of museum works online, and successful AdWords features like Automated Rules, are great examples of projects that started out in our 'microkitchens.' This is why we make sure Google is stocked with plenty of snacks at all times.



Share_everything

Our employees know pretty much everything that's going on and why decisions are made. Every quarter, we share the entire Board Letter with all 26,000 employees, and we present the same slides presented to the Board of Directors in a company-wide meeting.

By sharing everything, you encourage the discussion, exchange and re-interpretation of ideas, which can lead to unexpected and innovative

outcomes. We try to facilitate this by working in small, crowded teams in open cube arrangements, rather than individual offices.

When someone has an idea or needs input on a decision, they can just look up and say, 'Hey...' to the person sitting next to them. Maybe that cube-mate will have something to contribute as well. The idea for language translation in Google Talk (our Gmail chat client) came out of conversations between the Google Talk and Google Translate teams when they happened to be working near one another.

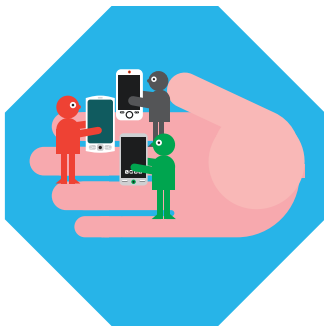


Spark_with_imagination, fuel_with_data

In our fast-evolving market, it's hard for people to know, or even imagine, what they want. That's why we recruit people who believe the impossible can become a reality. One example is Sebastian Thrun who, along with his team, is building technology for driverless cars to reduce the number of lives lost to roadside accidents each year. These cars, still in development, have logged 140,000 hands-free miles driving down San Francisco's famously twisty Lombard Street, across the Golden Gate Bridge and up the Pacific Coast Highway without a single accident. ➡

We try to encourage this type of blue-sky thinking through ‘20 percent time’ – a full day a week during which engineers can work on whatever they want. Looking back at our launch calendar over a recent six-month period, we found that many products started life in employees’ 20 percent time.

What begins with intuition is fueled by insights. If you’re lucky, these reinforce one another. For a while the number of Google search results displayed on a page was 10 simply because our founders thought that was the best number. We eventually did a test, asking users, ‘Would you like 10, 20 or 30 search results on one page?’ They unanimously said they wanted 30. But 10 results did far better in actual user tests, because the page loaded faster. It turns out that providing 30 results was 20 percent slower than providing 10, and what users really wanted was speed. That’s the beautiful thing about data – it can either back up your instincts or prove them totally wrong.



Be_a_platform

There is so much awe-inspiring innovation being driven by people all over the globe. That’s why we believe

so strongly in the power of open technologies. They enable anyone, anywhere, to apply their unique skills, perspectives and passions to the creation of new products and features on top of our platforms.

This openness helps to move the needle forward for everyone involved. Google Earth, for example, allows developers to build ‘layers’ on top of our maps and share them with the world. One user created a layer that uses animations of real-time sensor data to illustrate what might happen if sea levels rose from one to 100 meters. Another famous example of open technology is our mobile platform, Android. There are currently over 310 devices on the market built on the Android OS, and close to half a million Android developers outside the company who enjoy the support of Google’s extensive resources. These independent developers are responsible for most of the 200,000 apps in the Android marketplace.



Never_fail_to_fail

Google is known for YouTube, not Google Video Player. The thing is, people remember your hits more than

Quantify: Innovation

In a recent six-month period, half of Google’s core initiatives started as projects during employees’ 20 percent innovation time.⁵

your misses. It’s okay to fail as long as you learn from your mistakes and correct them fast. Trust me, we’ve failed plenty of times. Knowing that it’s okay to fail can free you up to take risks. And the tech industry is so dynamic that the moment you stop taking risks is the moment you get left behind.

Two of the first projects I worked on at Google, AdSense and Google Answers, were both uncharted territory for the company. While AdSense grew to be a multi-billion-dollar business, Google Answers (which let users post questions and pay an expert for the answer) was retired after four years. We learned a lot in that time, and we were able to apply the knowledge we had gathered to the development of future products. If we’d been afraid to fail, we never would have tried Google Answers or AdSense, and missed an opportunity with each one.

Our growing Google workforce comes to us from all over the world, bringing with them vastly different experiences and backgrounds. A set of strong common principles for a company makes it possible for all its employees to work as one and move forward together. We just need to continue to say ‘yes’ and resist a culture of ‘no’, accept the inevitability of failures, and continue iterating until we get things right.

As it says on our homepage, ‘I’m feeling lucky.’ That’s certainly how I feel coming to work every day, and something I never want to take for granted ☺