You climb 170 steps up a series of dusty wooden ladders to reach the top of Hangar Two at Moffett Federal Airfield near Mountain View, California. The vast, dimly lit shed was built in 1942 to house airships during a war that saw the U.S. grow into a technological superpower. A perch high in the rafters is the best way to appreciate the strangeness of something in the works at Google—a part of the latest incarnation of American technical dominance.

On the floor far below are Google employees who look tiny as they tend to a pair of balloons, 15 meters across, that resemble giant white pumpkins. Google has launched hundreds of these balloons into the sky, lofted by helium. At this moment, a couple of dozen float over the Southern Hemisphere at an altitude of around 20 kilometers, in the rarely visited stratosphere—nearly twice the height of commercial airplanes. Each balloon supports a boxy gondola stuffed with solar-powered electronics. They make a radio link to a telecommunications network on the ground and beam down high-speed cellular Internet coverage to smartphones and other devices. It's known as Project Loon, a name chosen for its association with both flight and insanity.

Google says these balloons can deliver widespread economic and social benefits by bringing Internet access to the 60 percent of the world's people who don't have it. Many of those 4.3 billion people live in rural places where telecommunications companies haven't found it worthwhile to build cell towers or other infrastructure. After working for three years and flying balloons for more than three million kilometers, Google says Loon balloons are almost ready to step in.

It is odd for a large public company to build out infrastructure aimed at helping the world's poorest people. But in addition to Google's professed desires to help the world, the economics of ad-supported Web businesses give the company other reasons to think big. It's hard to find new customers

Breakthrough
A reliable and cost-effective way to beam Internet service from the sky to places lacking it.

Why It Matters
Internet access could expand educational and economic opportunities for the 4.3 billion people who are offline.

Key Players
- Google
- Facebook