

GLOBAL HEALTH

Innovation Insight Series



Tozun and Goldman
accept their prize at the
DFJ Venture Challenge

Photo: d.light design

| D.LIGHT I: Securing Early Funding

SAN FRANCISCO, CALIFORNIA

ESTABLISHED 2006

NED TOZUN, PRESIDENT AND
FOUNDER

SAM GOLDMAN, CHIEF CUSTOMER
OFFICER AND FOUNDER

THE PROBLEM/SOLUTION SPACE

Worldwide, approximately 1.3 billion people still do not have access to electricity. This includes 550 million living in Africa and 400 million in India.¹ Many of these individuals still live in the dark at night. Those able to afford light spend between 5 and 30 percent of their income on kerosene oil for lamps.² However, kerosene is dangerous and can negatively impact health. Burning kerosene creates indoor air pollution, which kills an estimated 1.5 million individuals annually from respiratory diseases including chronic obstructive pulmonary disease (COPD) and respiratory tract infections. Over half of these deaths claim victims under the age of five.³ Evidence also links indoor air pollution

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to lung, laryngeal, and nasopharyngeal malignancies, heart disease, and low birth weight. Moreover, kerosene lamps claim lives from burns, fires, and suffocation.⁴ The poor quality of light and toxic fumes from burning kerosene also reduce the productivity of families and businesses and limit the hours children are able to study.

ABOUT D.LIGHT

d.light design provides affordable, clean, durable, and energy-efficient solar and LED lighting solutions for the developing world. The company's mission is "to create new freedoms for customers without access to reliable power so they can enjoy a brighter future."⁵ According to d.light, it will begin to accomplish this by replacing every kerosene lantern with clean, safe, and bright light. By the end of 2020, d.light aims to have improved the quality of life of 100 million people with its products. As of 2012, nearly

10 million people across 40 nations had already benefited from its solutions, including the d.light S10, the so-called "\$10 kerosene killer," which the company claimed to be the world's most affordable high-quality solar lamp. By replacing kerosene lamps, d.light solutions had improved health, increased economic productivity, and provided consumers with total energy-related savings of \$135 million. They also had reduced CO₂ emissions by more than 350,000 tons.⁶

The inspiration for d.light was first sparked when cofounder Sam Goldman was a Peace Corps volunteer in the West African republic of Benin from 2001-2005. According to Goldman, "I would lie at night in the village, looking up at the stars, and thinking how crazy it was that there were satellites up there orbiting the earth when down on the ground we were still sitting in the dark."⁷ Burning kerosene was the commonly accepted alternative to complete darkness, but Goldman quickly realized that this was far from an optimal solution. He was especially moved when he learned how his neighbor's young son had been severely burned by kerosene. "It was disturbing to see that when we made so much progress in terms of technology, we still did not have a solution to this grave problem. So I had made up my mind to provide a source of light that is safe and cheap."⁸

Directly after the Peace Corps, Goldman enrolled at the Stanford Graduate School of Business (GSB) to pursue an MBA in social entrepreneurship. In 2006, his interests led him to a course entitled "Entrepreneurial Design for Extreme Affordability," which provided students with project-based

opportunities to design solutions to address specific needs of the world's poor. In this class, he teamed up with fellow MBA student Ned Tozun and engineering students Erica Estrada and Xianyi Wu to tackle the lighting challenge. Over the span of the two-quarter course, they developed prototypes of portable, affordable LED lights fit for use in low-resource settings. Within a couple of months, they started field testing their designs in Myanmar and found that demand was not only strong, but overwhelming. "People would



Photo: d.light design

Children in India with d.light's S10 solar lantern

actually weep as they talked about how the lights had transformed their lives,” Tozun remembered.⁹ In one village, the police even confiscated prototypes for their own use — they needed light too.¹⁰ After taking the summer off to complete various internships, the team reunited and decided to form a company to develop their ideas into a real product.

ONE CHALLENGE: SECURING EARLY FUNDING

Like many first-time entrepreneurs, Goldman and Tozun had an ambitious vision for their company but, as graduate students, they had almost no funding. They raised their first \$10,000 from small donors, principally family, friends, and a church Tozun was attending. Goldman and Tozun also secured some financial support from Stanford’s Hasso Plattner Institute of Design and the GSB’s Public Management Program. These funds financed plane tickets for a return trip to Myanmar, additional field research, and further prototyping. “All we needed at that point was a couple thousand here, a couple thousand there. We weren’t doing anything too expensive,” recalled Estrada. However, it did not take long for d.light to require substantially more funding in order to grow.

THE SOLUTION: USING BUSINESS PLAN COMPETITIONS TO REFINE STRATEGY AND EARN SUPPORT

Goldman and Tozun dedicated much of their second year of business school to refining the young company’s business plan. They assembled an early board consisting of respected faculty members who provided feedback and guidance at monthly meetings.

An idea that emerged through brainstorming sessions was to use various business plan competitions as a launching pad for d.light

One of the early issues they addressed with the board was how to raise the funds they needed to drive a more robust product development process. It felt early to be able to attract professional investors to the product, but the team needed access to more substantial financing. An idea that emerged through brainstorming sessions was to use various business plan competitions as a launching pad for d.light.

Somewhat experimentally, the team first entered the Entrepreneur Idol contest sponsored by Charles River Ventures.

d.light won first place and \$2,000. Encouraged by this early success, they entered the Global Social Venture Competition (GSVC) at Berkeley, where they won second place overall and first place in the “social impact assessment” category, along with \$10,000. From there, they more aggressively sought to identify competitions with larger awards. Before long, the team realized two more important victories. First, d.light won \$25,000 at the BASES Social E-Challenge. Next, it achieved widespread recognition at the national Draper Fisher Jurvetson (DFJ) Venture Challenge, where the team was awarded \$250,000. This prize took the form of an investment from DFJ at favorable terms. It was structured as convertible debt that would convert into equity when d.light eventually raised its Series A funding.

Admittedly, Tozun and Goldman invested a fair amount of time in preparing the submissions for these competitions. However, the preparation process had some valuable “side effects.” According to Tozun, the competitions provided “hard deadlines” and detailed requirements that pushed them to think deeply about their plans and structure their work. Tozun also viewed the competitions as opportunities for “getting practice doing pitches.”

Perhaps most valuable was advice and mentoring from successful entrepreneurs and investors, which these individuals provided as they evaluated the d.light pitch. With this feedback, the team's business plan emerged stronger with each competition.

The competitions also generated publicity and provided a stage for the d.light team to showcase its creativity and commitment. "To some degree," said Tozun, "I think we were able to convince investors that we were really passionate and that we were going to figure this out." For example, after the DFJ Venture Challenge, an investor with whom Tozun had worked at another company offered to match the DFJ investment. "He saw the presentation and was impressed with what we were doing," Tozun explained.

Shortly after this important milestone, Tozun and Goldman were scheduled to graduate. Although both men had multiple job offers, they decided to turn them down and commit themselves to d.light. As Tozun recalled, "We didn't have enough money raised at that point to guarantee that we could pay ourselves or the team for more than a few months. So we spent the summer fundraising and we ended up closing our seed round in October 2007, about five months after we graduated. The fact that we had committed ourselves to d.light full-time was an important

selling point for the investors and helped us close the deal." The team also benefited from its progress to date and the positive reputation it had developed through the various business plan competitions.

In total, d.light secured \$1.6 million in funding from six venture firms and four Angel investors. As Tozun recalled, "We finally had enough funding that we could bring the product to market and pay ourselves the minimum to get by."

Their newly established relationships with investors were critical as they worked in partnership over the next year to refine d.light products. Looking back on the company's funding strategy and, in particular, its early reliance on business plan competitions, Tozun said, "I wouldn't necessarily recommend this approach for everyone, but it was a really good stepping stone to help us get ready to involve real investors." In addition, he noted, "It helped us get some of the right investors on board. You want investors who can continue to invest in you and who can really support you in the long term," like Draper Fischer Jurvetson. In the fall of 2008, d.light secured an additional \$5 million in Series A financing, with Nexus India Capital leading the round, followed by Acumen Fund, Gray Matters Capital, and a number of other investors.¹¹ The company opened its first international offices in early 2008, starting with India and China. d.light then expanded to Africa in 2009, opening a regional hub in Nairobi, Kenya in 2011. ♦

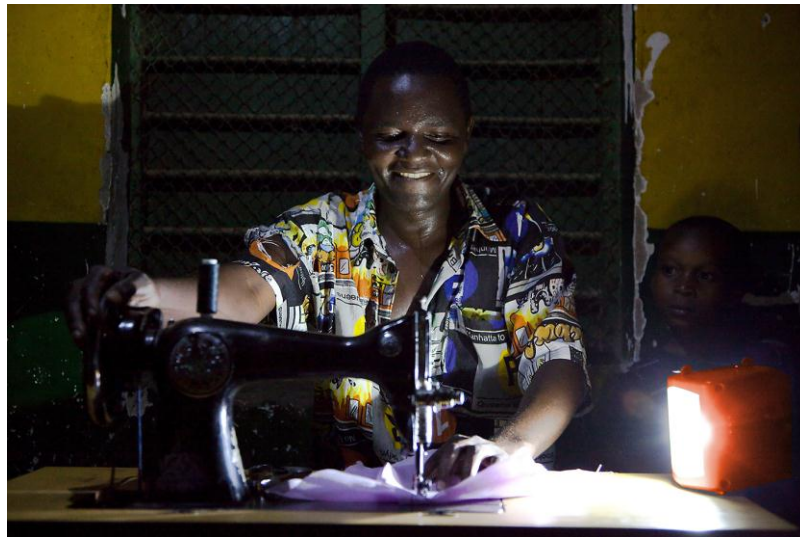


Photo: d.light design

One benefit of d.light's products is that they extend a family's productive hours for working and studying

NOTES

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