2021–January–12

Did you know? You can share this story using the social media icons on the upper left. Use the hashtag #WeAreCisco. You can also rate or comment on the story below.

Lighting up the World with the Power of Technology

☆☆☆☆☆

For people with visual impairments, living in China can be daunting. In some cities, poorly designed pathways, unkept roads, and limited access to guide dogs make walking hazardous, if not impossible. Many people choose to stay home rather than engage with the outside world.

But for electrical engineer Alex Wang, whose vision began to deteriorate in early adulthood before becoming blind in 2009, the challenge served as motivation to find solutions — and begin a journey that would eventually lead him to a team of passionate volunteers at Cisco.

The teams from Hangzhou, Hefei, and Suzhou connecting on Webex during one of their regular review meetings.

Beginning With a Mission

In 2013, Alex and his partner established Renpin, an NGO on a mission to provide both personal and professional support to people with visual impairments.

To accomplish that mission, Renpin teaches practical life skills, offers counseling services to people with visual impairments, and provides hands-on and online computer and mobile skills training.

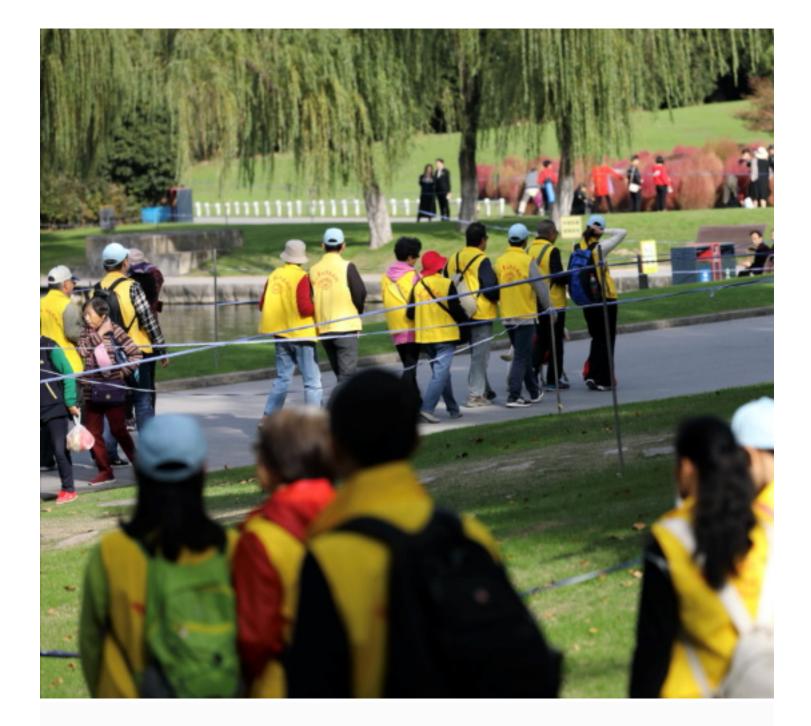"We hope that our project eliminates barriers and gives people with visual impairments the opportunity to use their professional skills to better integrate into society," Alex announced during the organization's launch.

Growing a Partnership

Cisco employees in China first learned about Renpin in November 2018, when they volunteered at a Renpin event, guiding people with visual impairments on an outdoor walk.

In March 2019, Renpin submitted a technical support request to the Cisco China Research and Development Center (CRDC) to develop an independent application for the blind. The WeChat Mini Program was our first step to help people with visual impairments socialize online. A partnership soon began to grow and flourish.

The next month, Alex visited the CRDC to share the challenges he was tackling. By June, the CRDC and Renpin officially launched the Support for People with Visual Impairments project. This CSR initiative established a team of 30 Cisco engineering volunteers across China dedicated to developing software to help people with visual impairments navigate life.

Volunteer walk at Century Park, Shanghai, during our first meeting.

"When Alex shared his life experience, we could better understand the importance of caring for groups that face unique challenges," noted backend developer Tianyu Xu.

"And we never know when we ourselves may be faced with being in their position and need support so that we can live a more secure life."

Bringing Their Vision To Life

Through this software, the CRDC team aims to pair volunteers with people with visual impairments for both in-person and virtual, video-based assistance, including enabling the volunteers to act as a user's "eyes" to read instructions, check use-by dates, and ensure that their surrounding environment is safe.

Alex, the lead of RPI, showed us how blind people can use mobile phones through screen readers.

To get there, the engineers first invested in understanding how sight-impaired people interact with software, continually improving the UX and the program's accessibility for the visually impaired.

"The user experience is the biggest difference between this project and the usual app development," said Tianyu Xu. "We designed buttons that could be intuitively used by those with visual impairments and support them to use hearing to navigate the platform."

It was a customized solution that required exhaustive testing and tweaking to meet performance requirements. "In the product test, we simulated their listening and reading habits, and tested the product at twice the speed of a natural speaking voice so we could expose product issues," explained UX designer Xinhui Han.

"We simplified a complex registration process into two steps to eliminate the need for phone number verification. We made everything as easy as possible to be read aloud for even easier access."

The technical work is an ongoing process, with the team leveraging key learnings and insights from third-party programs as it seeks to enhance the program's user friendliness.

The First Steps To Independence — and Beyond

Less than two years later, the program to support people with visual impairments has achieved its primary goals. The next step is to scale.

To boost the program's growth, Cisco engineers will make the program's source code available to the public, sharing its innovative R&D with global NGOs. The breadth and scale of Cisco's efforts have exceeded Alex's expectations while inspiring even greater success.

"Built together with Cisco, this project provides a barrier-free digital experience, supporting screen reading software and simplifying the user experience," Alex explained.

"In the future, we expect to automate the function that matches volunteers with people with visual impairments, extending the space in which these people can comfortably live."

Improving the World Through Innovation

Support for People with Visual Impairments is an integral part of what makes Cisco the world's best workplace.

By engaging communities to better support those in need, CSR programs like this can keep donating world-class IT capabilities to improve lives.

"We were guided by Alex's mission to bring more equality to the visually impaired," said product manager Shijie Yuan.

"I hope that we can inspire others in the industry and the general public to pay more attention to the needs of people with visual impairments and improve accessibility of digital products so that those with disabilities can better integrate into society."

Related Links

- CRDC Celebrates 15 Years
- Our Impact – CSR & Time2Give
- Careers at Cisco

Connect everything. Innovate everywhere. Benefit everyone.

Average rating for this story   ☆☆☆☆☆   (16)