When wheelchair design can take many steps up

1 April 2017, by Nancy Owano

(Tech Xplore)—The biggest gift to someone who gets around is the gift of greater independence. Lifts for wheelchairs are available but not always in proximity. Some students got together and started thinking they might be able to change the curious lack of progress in wheelchair design to help those who use them.

Advances in electric wheelchairs lagged behind so many advances in items such as smartphones, electric cars, drones; even robotic vacuum cleaners improved.

They wanted to bring a modern wheelchair into view.

Their Scewo wheelchair was founded by an interdisciplinary team of four university students from Swiss Federal Institute of Technology (ETH) in Zürich or at Zurich University of the Arts. The chair is 65cm wide and 105cm long with a total weight of 101kg.

According to the Scewo site, "The self-balancing technology enables rotating on spot and driving over curbs without getting stuck. The big wheels can go over obstacles without entanglement."

Looking at the chair, *designboom* talked about the chair's modes. Driving mode, stair mode, safe mode (stationary), elevated mode (The tracks and the small wheels at the back can be lowered together below the main wheel to rise the seat up. This enables eye-to-eye communication) and track mode to overcome slippery surfaces (like snow, loose gravel) make the chair quite useful.

Speaking of the stair mode, Rich Haridy in *New Atlas* said, "The Scewo switches to Stair Mode at the push of a button, lowering a set of grippy rubber tracks that the designers say can swiftly transport the user up or down most staircases."

The team FAQ page asks what types of staircases can it drive on. They answer, "Staircases with a slope from 17° to 34°." It is also able to drive on spiral staircases.

What is next and when will it go to market?

The chair is a prototype so you cannot see a price yet. The site said the wheelchair is under active development.

Actually, they seek funds to move the project forward.

They explained what they need. The project started as an educational project in late 2014. After 9 months, they presented the first prototype known as Scalevo, developed by a team of 10 students. Scewo is their second electric wheelchair prototype.

The team estimates they will have a version that can be produced in numbers by the end of 2018.

They are reaching out for funding. "We just recently started our crowdfunding at Patreon to help us concentrate more on Scewo besides our studies."

We mean, talk about bootstrapping. They would even be happy with boots.

"We are no company yet and we simply rely on our own money. It is really hard for us to study + work on scewo + do a job. With your support you can help us get though this time and accelerate the development of the Scewo. If we get enough money we would like to hire fellow students to accelerate the process even more."

More information: scewo.ch/
www.patreon.com/scewo

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