

Bringing 'Wakanda' to life with life-saving drones



By Louise Marsland

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"Wakanda lives!" This was the rallying cry from Design Indaba speaker Keenan Wyrobek, Zipline co-founder and chief technical officer of the company headquartered in California and Rwanda, that harnesses drone technology to deliver life-saving medical supplies in Rwanda.



Zipline drone distribution centre, Rwanda.

[Wakanda](#) is the mythical home somewhere in Africa, of Marvel Comics superhero Black Panther. The movie *Black Panther* was released in 2018 to popular acclaim. What gives the fictional nation of Wakanda and its leader, the Black Panther, their power, is their advanced technology.

"To a geek like me, this means that Wakanda lives. Wakanda is happening, led by superheroes in Africa!" said Wyrobek. "The youth in Africa are using technology to solve vital problems, so African youth are leading the world. The future is right here."

Zipline's mission is, "to provide every human on Earth with instant access to vital medical supplies". On their website, they talk about how too many people are "underserved by last century's limited solutions: trucks, trains, and washed-out roads".

"Zipline happened because I took the best advice I've ever been given: 'To get out there in the world'," explained Wyrobek. He experienced travelling the rural roads of Africa and the difficulties faced when trying to deliver medicines and vaccines that need cold storage – and the company found their purpose: to revolutionise emergency medical supply delivery in developing countries where infrastructure was lacking or challenging.

Live tour

The Zipline team and a team from Rwanda worked together from the start on the design and implementation. During his presentation, Wyrobek crossed over live to Rwanda and took the Design Indaba audience on a live tour of one of its two drone facilities in the country and we watched a drone launch with much-needed blood for a clinic 80km away. It is stunningly effective.

Wyrobek told Bizcommunity.Africa he is incredibly positive about the future of the African continent because of the fact that it will have the biggest youth population in the world. “I don’t think a lot of people understand the youthful population boom coming in Africa. I was surprised at how fast we went in Rwanda to the entire Rwandan operation entirely staffed and run by Rwandans. It only took six months. I thought it would take years. The talent among the youth, the level of passion, the technical skills and operational skills, was amazing.

“Already the team from Ghana have finished their training at the Rwanda centres and it happened really fast too.”

As the Zipline company video says, this is not a small step, but a “transformational change” in how medical care is provided all over the world, but especially to the most vulnerable. [Zipline](#) is reengineering the future.

“Zipline leap-frogs these outdated solutions with a cost-effective drone delivery network, revolutionising access to healthcare.”

10 000 life-saving deliveries

Basically, how it works is that Rwandan doctors place orders on-demand through a simple app for any medicine they need – from blood to drugs – and Zipline's drone distribution centres, some conveniently located to medical warehouses; and a drone delivers the vital medication. The drones are programmed to fly to the destination, drop the package, which has a small parachute, turn around and fly back to the distribution centre – all in about 30 minutes. Whereas a similar delivery could take up to four hours by road in rural Rwanda. The incredible time saving helps maintain the cold-chain and product integrity, saving lives.



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They have launched over 10 000 lifesaving deliveries from the two Zipline Rwanda centres since launching in October 2016 to serve the 11 million Rwandans; and are about to go live in Ghana, where four distribution centres are needed to cover the larger African country of 29 million people. QR codes on the packages and the drone tell it where to go.

The stats:

- The drones fly in all weather conditions.
- The average time from order placed to delivery is 30 minutes, and many trips are done in 15 minutes – compared to four to five-hour truck journeys previously.
- There is an 80km radius per distribution centre, which means a single Zipline distribution centre can provide instant medical access to millions.
- A single flight can deliver up to 3 units of blood in the 1.8 kg payload.
- Drones have two motors to deal with redundancy.
- Zipline flies more than 40 000 km every week – once around the world every seven days!

Zipline consists of a multi-national team of top engineers, operators and motivated difference-makers. It was founded in 2011 under the original name Romotive, by Keller Rinaudo, Keenan Wyrobek and William Hetzler, after they graduated from Harvard University. They went from designing a robotic pet toy called Romo for iPhone users, to refocussing the company in 2014 to address a real-world problem: how to get medical supplies to clinics and hospitals in rural areas using automated drones.

Zipline has been supported by the luminaries of the tech world, like the founders of Yahoo, Microsoft, Zappos and Stanford University; as well as the GAVI vaccine alliance, Google Ventures, and other venture capitalist firms.

“ Founder of the world's first drone delivery system for medical supplies in Rwanda, Keenan Wyrobek. Such amazing use of technology.  [#DesignIndaba2019 pic.twitter.com/sFExC7E0r9](https://twitter.com/sFExC7E0r9)— Xolisa Dyeshana (@XolisaDyeshana) [February 27, 2019](#) ”

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