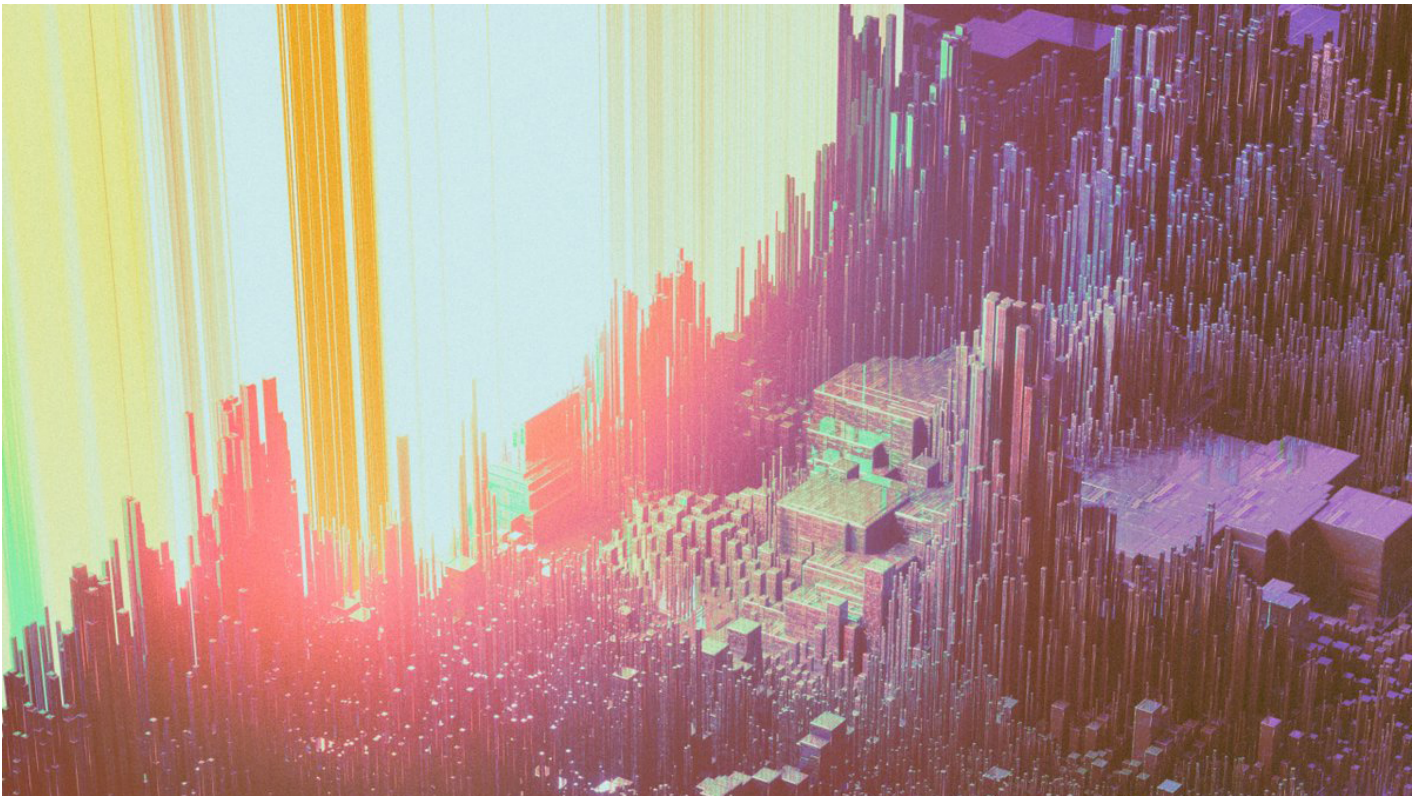


How Cardano can help development in Africa

We are taking the first steps on our journey in the continent and invite you to join us

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Five years ago, I was with a friend when she received a distressing call from her home in East Africa. Without permission, someone had been collecting the rent on a small commercial premises she owned in the capital. My friend had inherited the property five months previously from her father, but had only recently discovered that the property had tenants. The rent collector in question turned out to be a neighbour of the property and the previous owner. Upon learning that her father had passed away, he'd elected to take advantage of the confusion and collect the rent for himself. In the court case that followed, my friend provided a fund transfer receipt she had found in her father's office. Expecting that to be the end of it, she was shocked when the neighbour still claimed the plot to be his, on the basis of his name being registered with the utilities company. The problem for the court was that when there is no reliable record of ownership what should it do?

When friends in London ask me if the UK government will ever adopt blockchain technology, I have to stop and think. Blockchain can reduce cost and increase efficiency in almost any industry that involves record keeping. However in countries with entrenched processes and institutions that reliably (if expensively) maintain records, efficiency may not always provide sufficient motivation for governments to switch. The [UK Land Registry](#) is such an example. Founded in 1862, this institution has 4,486 employees and over 150 years of expertise and cultural history, which allows me to access a record of ownership history for any property at a cost of £7. This reliable legal title acts as a catalyst for economic growth. Landowners can use property as collateral to borrow money, perhaps to expand their businesses. If they choose to sell their property, the purchaser can pay with the confidence that they are truly purchasing the legal title.

For many African countries however, this is not the case. Efforts to improve records have generally had limited impact. That is not to say there have not been successes. In a three-year programme, Rwanda led an effort to register titles of land ownership. It was effective, and by the time the scheme was complete, 81% of plots had been issued titles, driving investment and economic growth. Embracing the high mobile penetration rate, the ledger was linked to a telephone service, allowing the ownership of plots of land to be instantly queried in ongoing disputes. Yet without the institutional cultural history of accurate ledger keeping, there continued to be problems with keeping records up to date when land was sold or inherited. Enter blockchain.

A digital blockchain property register that identified land using GPS coordinates would allow property ownership to be verified and transferred at low cost. Rwanda has woken up to this, and as part of its digital transformation plan is looking to port its ledger onto the blockchain. There are similar noises in both Kenya and Ghana, as government officials begin to see that the technology might let them leapfrog the 150 years of development the UK Land registry has benefited from.

If the opportunities that are now arising for blockchain trials in sub-Saharan Africa are to be maximised, then they should be built on robust and [open-source](#) technology. Our aim with [Cardano](#) was to build a blockchain based on peer-reviewed academic research by some of the world's foremost researchers and engineers. We chose to write it in Haskell, a formal programming language that allows mathematical guarantees of the correctness of code. These design decisions were made not because they were easy, but because they would give strong foundations to whatever applications were built on Cardano. We have started down this road, and now is the time to begin planning trial projects across countries in the African subcontinent. We aim to make Cardano the blockchain used to build land registries and much more.

This is a grand ambition and will not be accomplished in a day. Success will be achieved only if public authorities invest in creating the required legal and regulatory environments for these trials. Even after proving value, there will be implementation challenges in scaling a tech solution to run for millions or hundreds of millions of people. Governments, NGOs, and the private sector will need to work together to fulfill the promise of this technology.

IOHK must earn the right to sit at this table by building credibility through sustained investment of resources and attention. Our first inroads to Africa will therefore be with education. The core of Cardano is the [Haskell engineering team](#), who turn our research into actual lines of code. We have run engineering schools in partnership with universities in [Barbados](#) and [Greece](#), taking young graduates and intensively training them in Haskell. At the end of the course, some will be employed by IOHK as junior software developers, continuing their training and earning a competitive salary. Training is free, without obligation, and delivered by leading academics in the field. We have hired 70% of the students that have embarked on the scheme, with most of the remainder continuing on into further education. Education should not strip a country of their best and brightest, and the jobs that are offered are local, allowing hires to contribute to a global project from their own country. This year we will offer our first course in Africa, probably in Ethiopia, and expect the first cohort of Ethiopian developers to be contributing to Cardano code by the end of the year.

IOHK | Charles Hoskinson at LSE, Cardano's goals for Africa.



My excitement about Cardano's potential to solve development issues has only grown since starting this role a few weeks ago. I have heard from some amazing companies who want to use Cardano to do incredible things. From increasing biodiversity in Kenya to making a decentralised app to connect participants in the informal South African rental market, the possibilities for Cardano are truly endless. And with this unbounded opportunity comes risk. The risk of being swept up in the grand mission and not understanding local needs and wants. Facebook's [misguided entrance to India](#) with their basics product should provide a cautionary tale to any tech company that believes their technology can make a social impact. So we need to learn, and will work with local partners to discover requirements before suggesting solutions. We are ready to take the first small steps on this journey. So humbly, I use this blog post as an open invitation to get in touch, because certainly, we will need your help.

If you are based or work in Africa and would like to help, please submit your details through [this form](#). We are looking to partner with governments, the private sector, and NGOs who are interested in using Cardano. We are also looking for community volunteers to help organise events and meetups.

Artwork  [Mike Beepie](#)

