Using the Cloud and IoT to deliver safe, affordable energy in Africa

M-KOPA Solar

Africa

Living Off-Grid

1.3 billion people around the world lack access to electricity. Over 600 million of them live in Africa and are largely reliant upon fuels like kerosene to light their households after dark. Kerosene is expensive, offers poor-quality lighting, is unsafe (hundreds of thousands of people each year are killed or injured by kerosene-related fires and accidental ingestion), and causes health problems like respiratory issues. For many living off the grid, daily reality includes spending a significant portion of disposable income to purchase kerosene, batteries for flashlights and radios, and charges for mobile phones. Children squint to do homework by lantern light, and many small shops close at dusk, decreasing productivity and income.

However, by way of an innovative solution from Microsoft's partner M-KOPA Solar, the livelihoods of over two million people living in over half a million homes across East Africa are being improved by a combination of the sun, mobile phones, M-KOPA's Internet of Things (IoT) solution, and Microsoft Azure.

M-KOPA Solar

M-KOPA is the largest provider of solar home systems in East Africa, providing pay-as-you-go access to clean energy solutions that displace kerosene. Powered by a small portable solar panel, M-KOPA's solar home system includes bright, efficient LED bulbs, a charging solution for mobile phones, rechargeable radio and flashlight, and an optional television – all for the same amount that would otherwise be spent on kerosene. M-KOPA now services over 500,000 homes, meaning over 2 million people now enjoy access to abundant lighting and upgradable productive assets like solar televisions, energy-efficient cooking stoves, internet-enabled smartphones, and water storage tanks. Its customers pay for their service from the convenience of their own mobile phones, making small payments made via mobile money services available on across the region.

The Power of Azure and IoT

M-KOPA provides reliable energy and expanding services to its customers and it's accomplishing this through cutting-edge utilization of Azure services like Service Fabric, Data Lake, and Event Hub. Each solar home system is a cloud-connected IoT device, and Azure provides the infrastructure upon which M-KOPA has built its IoT platform.

This solution leverages many of the cloud capabilities of Microsoft Azure, using a wide range of platform-as-a-service capabilities such as App Services, Azure Functions, Azure SQL Database and CosmosDB. M-KOPA's transition from datacenter to IaaS to PaaS has enabled a cost-efficient, highly scalable and manageable technology platform which underpins its business. With the power of Cortana Intelligence Suite (including Azure Machine Learning) and Power BI, M-KOPA can receive predictive information about everything from battery telemetry data to customer repayment behavior, delivering actionable business insights to grow their business and keep their customers happy.

Unlocking Opportunities

With the flick of a switch, M-KOPA's customers access clean energy to power their homes, charge their phones, and tune in to radio and television. These systems help unlock people's economic potential by making them healthier, wealthier and more productive. M-KOPA truly lives up to its promise of allowing its customers to "upgrade your life". M-KOPA's innovative and affordable solution is connecting much-needed services to millions of people who were previously excluded due to geography or lack of funds. Through the innovation of M-KOPA and the power of Microsoft Azure, more people in Africa are accessing products and services that help them be more connected, productive, and financially secure.

Products and Services

Microsoft Azure
Azure Machine Learning
Cortana Intelligence Suite

M-KOPA Awards

Best Mobile Innovation for Emerging Markets at the Global Mobile Awards - 2016

Top 50 Companies Changing the World by Fortune Magazine – 2015

Winner of Zayed Future Energy Prize – 2015

Bloomberg New Energy Pioneer Award – 2014

FT/IFC Excellence in Sustainable Finance Award – 2013

4Afrika Promise

Delivering affordable access, skills, and innovation on the African continent.

[How Microsoft is empowering African youth, entrepreneurs, and civic leaders](#)

Call to Action

About 1.3 billion people worldwide lack access to electricity. 49% of the world is offline. Together we can change that. Your solution and our support can deliver affordable access in underserved communities.

To learn more about how your off-grid energy access business could be using Microsoft's Azure platform please contact the Airband International Team at airbandintl@microsoft.com.

[How Microsoft Airband Initiative is connecting the world](#)