



NOTRE DAME INITIATIVE FOR GLOBAL DEVELOPMENT

THE CE3 PROJECT

Connectivity, Electricity, and Education for
Entrepreneurship in Uganda and South Africa

2017 UPDATE



UNIVERSITY OF
NOTRE DAME

Keough School of Global Affairs

FACTS AT A GLANCE

PROJECT NAME

Connectivity, Electricity, and Education for Entrepreneurship (CE3)

COUNTRIES

Uganda
South Africa

REGION

Sub-Saharan Africa

PROJECT DURATION

2012–2017

SPONSORS

Accenture
Lenovo
Hewlett-Packard
Inovateus Solar

PARTNERS

BOSCO-Uganda
EDUCATE!
Mentec Foundation

NOTRE DAME FACULTY

Thomas Loughran, College of Science
Kevin Donovan, College of Arts & Letters
Wyatt Brooks, College of Arts & Letters
Terence Johnson, College of Arts & Letters

TOTAL PROJECT INVESTMENT

\$2,700,000

TOPICAL AREAS

Energy, Environment, and Sustainability
Education
Human and Economic Development



William Mzimba, Chief Executive of Accenture South Africa, speaks to local media at the opening of a new information and communications technology (ICT) center.

“Among other things, The CE3 Project has helped to retain and preserve the social fabric of families living in the rural communities where the model is deployed. Limited local job prospects often drive members of the family to urban centers, far away from their homes and families, to earn a living. By growing businesses that provide employment opportunities locally and fill community needs, revenue can be retained in the local economy and families are able to remain together.”

—Gabriella Oken-Wilbur, Global Programs Manager, Accenture Development Partnerships

IMPACT

Prior to the University of Notre Dame Initiative for Global Development’s (NDIGD) implementation of the Connectivity, Electricity, and Education for Entrepreneurship (CE3) pilot in Uganda, project sites were disconnected from the electrical grid, had no access to the Internet, and possessed little computing infrastructure. With clean, renewable solar energy provided by CE3, more than 3,000 students at two secondary schools are now able to study in the evening, fully equipped computer labs are now used for entrepreneurship and job skills training, and 200 new jobs have been created. Overall, CE3 demonstrated its potential to increase local, sustainable economic and human development through the pilot.

Based on this success, NDIGD scaled to additional communities in Uganda and South Africa. By the close of the project, CE3 will have skilled over 3,500 entrepreneurs, created over 2,500 new jobs, and reached nearly 10,000 individuals in Africa. NDIGD and Accenture will also produce a “how-to” manual for replication of the CE3 model in other geographies.

CE3 seeks impact beyond these outputs as well. NDIGD is developing, testing, and refining a model of economic and human development that is economically sustainable. Innovating and iterating the CE3 model contributes to our understanding of how to design and deliver connectivity, energy, and education solutions that will continue to promote entrepreneurship and impact communities long after the initial project.

BACKGROUND

Working at the electrification frontier, NDIGD is leveraging sponsorship and consulting services from Accenture to design, implement, and monitor a new model of rural energy access. CE3 is a sustainable ecosystem that goes further than solar power, connectivity, education or any standalone solution. Instead, CE3 fosters an integrated systems approach that includes:

- Providing communities with **clean, efficient, renewable energy** on the kilowatt scale to power businesses and schools with costs that can be recaptured for sustainability and local reinvestment;
- Computer access, intranet, and Internet connectivity and training to **enable access to information and resources**, unleashing the creativity and motivation of the local community; and
- Entrepreneurial training, coupled with local and remote mentorship, providing **basic leadership and business knowledge** that leads to greater economic activity.

UGANDA

For the past two decades, northern Uganda has been the center of violence perpetrated by the Lord’s Resistance Army rebels, which resulted in two million people being displaced from their homes and tens of thousands killed. In recent years, there has been relative stability in northern Uganda, but the people and communities still have limited access to electricity, connectivity, and jobs, resulting in crippling isolation. Only about 15% of Ugandans have access to grid electricity, and it is only about 75% reliable for those who are connected.

Launched in 2006 by a group that included Notre Dame alumni and faculty, BOSCO-Uganda began leapfrogging the missing technical infrastructure to supply ICT connectivity and training, strengthening communities in war-affected rural villages. High-speed intranet connected users with one another across regional communities, and a modest shared Internet connection brought news of events elsewhere in Uganda and abroad. Soon other international partners such as UNICEF joined the effort.

From the beginning, BOSCO’s communities began to leverage surplus solar power—beyond what was needed to power ICT—for small entrepreneurial ventures such as mobile phone charging and print services. The group began to discuss how they might build on that small start, equipping BOSCO users with entrepreneurial skills and micro-scale solar energy in support of new business ventures. There were obvious synergies, and CE3 was born to make the most of them.



A newly installed solar microgrid at the Pope John Paul II College in Gulu, Uganda.



Working with laptops in a new ICT center in Jozini, South Africa

SOUTH AFRICA

Racial inequalities persist across South Africa’s agricultural industries. Pre-apartheid legislation served as a legal way for the government to move farmers of color off of good, arable lands and locate them on undesirable farmland with poor soil, terrain, and topography. During the apartheid era, the South African government heavily subsidized the development and maintenance of irrigation and water infrastructure for land owned and inhabited by white commercial farmers. Today, during frequent and sustained drought periods, farmers of color struggle to compete in the local market against these established commercial farms as their irrigation equipment is outdated and energy inefficient. This makes traditional pumping methods using grid power or diesel engines expensive and, ultimately, unsustainable. The provision of clean, renewable energy and business training such as market analysis is therefore paramount to the survival and development of the smallholder farming industry in South Africa.

Exacerbating the impact of water scarcity, South Africa has also become an energy scarce country with severe limits in power availability due to demand well in excess of supply for nearly a decade. As a result, the national utility has increased power costs at an average of 15% per year. For those farmers with access to irrigation and other equipment, powering them is more expensive by the day and places an enormous financial strain on farmers and co-operatives.

CE3 partners with farmers and co-operatives to provide solar energy, ICT centers, and entrepreneurship training to members and the surrounding community. With affordable, reliable energy, access to real-time agricultural market information, and increased business acumen, smallholder farmers will be better able to compete.

PARTNERSHIP

Accenture and the Accenture Foundations have awarded NDIGD two grants as part of the company’s “Skills to Succeed” corporate citizenship initiative, which aims to equip three million people with the skills to get a job or build a business by 2020. In addition, the company committed to giving a substantial amount of pro bono and volunteer time to assist with the efforts. This unique project also furthers Accenture’s efforts to support the environment.

Hewlett-Packard and Lenovo have strengthened the ICT infrastructure for this project with donations of over 100 computers, accompanying software, servers, and peripherals. These low-power systems provided a consistent user experience at the lowest possible energy cost, leaving more energy for entrepreneurial and other job-creating initiatives. Inovateus Solar provided 60kW of solar panels at a discount for integration into CE3 microgrids to power the ICT centers and local businesses.

Completing this comprehensive approach, NDIGD provides project management and evaluation experts to research the impact that these efforts have on local communities.

The Partnership operates with the understanding that to build local economies, communities need improved technological and entrepreneurial skills, and to make those skills profitable, communities need reliable, clean energy.

SUSTAINABILITY

In addition to the provision of renewable energy resources and tools for entrepreneurship, NDIGD and Accenture continue to seek economic sustainability. Ultimately, CE3 seeks full economic sustainability where all capital and operating expenses are recovered through energy utility sales – something rarely achieved in international development. This full sustainability will allow for replication of CE3 and an associated increase in local economic and human development across multiple geographies. The CE3 model will also empower communities as system owners and partners in their own development.



The ribbon cutting ceremony at the handover of a solar microgrid installation and ICT center at the Pope John Paul II College in Gulu, Uganda.

2,531

ENTREPRENEURSHIP
AND ICT TRAINEES

1,130

NEW JOBS CREATED

40

NEW BUSINESSES STARTED

7

SOLAR SYSTEMS INSTALLED
ACROSS SUB-SAHARAN AFRICA

40

SOLAR TRAINEES

90%

OF CONSUMED ENERGY MONETIZED
AND RECAPTURED TOWARD
EXPANSION AND SUSTAINABILITY

Data compiled in April, 2017.



NOTRE DAME INITIATIVE FOR
GLOBAL DEVELOPMENT

3150 Jenkins Nanovic Halls, Notre Dame, IN 46556

(574) 631-2940 • globaldevelopment@nd.edu

ndigd.nd.edu



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