



Key Background: Africa



- World's second-largest and second most-populous continent (after Asia)
- Sub-Saharan Africa is undergoing explosive growth and is predicted to continue to outpace global growth with the population expected to double by 2050 to 2.1 billion
- Many frontier emerging markets: Botswana, Ghana, Kenya, Mauritius, Mozambique, Namibia, Nigeria, Tanzania, Uganda, and Zambia
- Overwhelming amount of literature: next “high-tech frontier” and “hotbed of technological innovation”



IEEE in Africa

- Roughly 7,500 members with nearly 100% countries represented
- Full range of activities across organizational units
- Despite growth and ongoing activity ... IEEE's presence in all of Africa is modest
 - Membership is low relative to population size
 - Africa accounts for roughly 1-2% of key IEEE metrics: Xplore monthly views and visits, IEEE conferences and revenue

2013 Africa Ad Hoc Committee

■ Chair: Vincent Kaabunga, (Kenya)

■ Members:

- Joseph Mutale (Zambia)
- John Funso-Adebayo (Nigeria)
- Saurabh Sinha (South Africa)
- Towela Nyirenda-Jere (Malawi)

■ Goals:

- Review and report on IEEE activities in Africa
- Focus on engineering capacity building
- Recommendations for the future
- Partner with IEEE Humanitarian Ad Hoc Committee



Key Activities in 2013: Presidential Delegation

- ▶ 30 meetings in 3 countries:
Zambia, Kenya, Ethiopia with:
 - Government
 - Industry
 - Academia
 - Fellow engineering organizations and local partners
- ▶ GOAL: Learn more about context, opportunities and challenges in engineering in sub-Saharan Africa and build relationships
- ▶ Partnered with Africa Ad Hoc Committee and Local Section Leadership



Key observations

- IEEE well-positioned to impact multiple aspects of engineering ecosystem
- Focus on building engineering capacity is correct approach
- Infrastructure issues cannot be ignored
- Key opportunities in multiple technical areas and standards
- Potential “leapfrog” scenario in education
- Opportunity for IEEE to serve as a resource in the development and implementation of science and technology policy
- Partnerships are critical to success

Immediate response

3 key areas identified:

- Improve access to technical information
- Convene on education with a focus on workforce development
- Establish partnerships with regional and pan-African stakeholders



Improving access to technical information

- Current paid subscriptions in sub-Saharan Africa: South Africa, Namibia, Botswana
- Eight countries received nearly free access to Xplore for last 7 years: Ethiopia, Ghana, Kenya, Malawi, Rwanda, Tanzania, Uganda, Zimbabwe... this program ended in June 2013
- In process multi-national consortium: Kenya, Malawi, Zambia, Zimbabwe, Tanzania
- In discussion with a number of countries: Ghana, Congo, Mozambique, Nigeria, Senegal

Improving access to technical information

- IEEE has adopted a modified market appropriate pricing approach
- Presidential support and focus
- Key to future success:
 - Cohort of university faculty with influence and drive to secure government funding
 - Local IEEE champions
 - Commitment and flexibility from IEEE

Convene on Education

- Educational Activities leadership is engaged
- Established an education forum in Kenya that will likely serve as a pilot for engagement mechanism
- Convening an “elevated” Teacher-In-Service Workshop TISP workshop with Institution of Engineers Kenya as the lead
- Piloting three projects that develop the forum for industry / university engagement in Kenya, Nigeria and Zambia
- Thought leadership at UNESCO sponsored events on the future of STEM education in Africa and women in education

Partnerships

- Conducting outreach and exploration to define opportunities since 2011
 - Partnership formed with UNESCO with a focus on Africa
 - Negotiating partnership with New Partnership for Africa's Development (NEPAD)
 - African Union
 - Up next: Industry partners
 - Ongoing outreach



Looking To The Future: IEEE And Africa

- ▶ November 2013: Second Presidential delegation: Ghana, Kenya, Tanzania
- ▶ Twofold purpose for November visit:
 - Conduct fact-finding missions so that IEEE leadership may to gain a clear understanding of the opportunities and challenges in the region
 - Build high-level relationships with a range of stakeholders that will expand our reach and that we may leverage later
- ▶ Develop short term plan (2014), long term strategy

