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## **KEYNOTE 3: NRENs: The Pathways to Global Knowledge and Collaboration**

*Tuesday, 4 December 2018 09:00 (45 minutes)*

The presentation will focus on the key aspects of the report of the World Bank on “The Role and Status of National Research and Education Networks in Africa” [1], which are applicable universally. The aim of this report, which is an open education resource, was to provide guidance to governments, institutions, and development partners on how to approach the provision of advanced information and communication technology (ICT) services to the higher education and research community in Africa. The premise of the report that the organization of ICT services and connectivity is best provided by a dedicated organization called the National Research and Education Network (NREN) is based on international best practice and is applicable worldwide.

Beginning with a brief overview of progress to date in all regions in Africa, including North Africa, the presentation will dwell more extensively on the important but often invisible role that NRENs play in the creation and the sharing of knowledge. NRENs not only provide the essential connectivity services to higher education institutions, but they do it uniquely within a global community that has its own rules and agreements for access and identity. In this way they provide customized services to the academic community that are not part of the offering of commercial Internet Service Providers (ISPs). The creation of an NREN in a country, that is also connected to its neighbours and globally, is a vital step to break through the academic isolation that universities and colleges may have experienced in the past and it can be the catalyst to be invited to join international research consortia. Creating new knowledge through research is now a thoroughly collaborative global endeavour, but participation is limited to those with adequate connectivity. And teaching and learning itself, the ‘E’ in NREN, has moved beyond dependence on textbooks and local lectures to an exercise in independent learning based on researching multiple sources of knowledge, which are primarily in digital form and accessible through electronic networks.

The presentation will outline the case for the establishment of an NREN, along with the services that it may provide, with possible governance models, and the various ways it can be made financially sustainable. Finally, the trends in the use of ICT in higher education and how they might affect the operation of NRENs are discussed as a prelude to guidance on how to go about establishing or strengthening an NREN, with recommendations to the government, the private sector, institutions, and development partners.

[1] <https://openknowledge.worldbank.org/handle/10986/26258>

### **Presenter Biography**

Michael Foley: Brief Biography

For all of his career Michael Foley has been an enthusiastic explorer of how information and communications technologies can transform education’s effectiveness and accessibility. From an early start in the 1970s applying audio-visual media to face-to-face learning in higher education and teacher training, he and his Audio Visual Centre team at the National University of Ireland in Dublin pioneered the educational use of satellite broadcasting in Europe in 1986. The catalyst was an Intelsat sponsored twenty six week course on Water Resource Management delivered live via an Intelsat satellite to students at the University of Jordan in Amman. From then on he and his centre concentrated on researching and applying emerging technologies, learning systems, and communications networks in order to make knowledge and learning more accessible. Through

programs sponsored by the European Space Agency (ESA) and the research framework programs of the European Commission (EC) he and his team explored direct broadcasting satellites, videoconferencing, cable systems and early use of the Web for e-learning. In the process he came President of the ESA sponsored EuroStep educational satellite channel and the Irish government's representative in the EC's DELTA program. In 1997 he was invited to join the World Bank Institute in Washington DC to contribute to the design and implementation of what became known as the Global Development Learning Network (GDLN), becoming Lead Distance Learning Specialist in 2004. GDLN is a network of institutional partners in developing countries using blended learning techniques and communications technologies to share knowledge on development. The early years were based on satellite technology but as partner countries began to roll out their own fiber optic based National Research and Education Networks (NRENs), especially in South Asia and Latin America, GDLN partnerships were established with these networks. This led Michael to become a champion of NRENs within the operational side of the World Bank, raising awareness among senior management and staff about the transformational effect that NRENs could play in the integration into the global academic community of the higher education institutions in their client countries. His report on "The Role and Status of National Research and Education Networks (NRENs) in Africa" was commissioned by the Bank as a guide to its own staff and to national governments, institutions, and donors.

**Primary author:** Mr FOLEY, Michael (World Bank)

**Presenter:** Mr FOLEY, Michael (World Bank)

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