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TECHNOLOGICAL LEARNING THROUGH INTERNATIONAL COLLABORATION: LESSONS  
FROM THE FIELD

**Abstract**

How do countries without local expertise in space technology begin a new satellite program? What is the role of international collaboration in supporting the efforts of a new space fairing country? This paper explores such questions by highlighting outputs from intensive field work in Nigeria, South Africa, Thailand, Dubai, Malaysia and South Korea. Specifically, the study explores case studies of early space activity in these countries to search for lessons about how to manage a young space program. The observations from field work are compared to ideas from scholarly literature on technology transfer, technological learning and project management. Countries on every continent are making new or renewed commitments to national space activity. Many are pursuing space because of the societal benefits that space resources can bring. They see that space provides support by enhancing access to information, increasing infrastructure and providing inspiration to the public. Countries that are new to space face a common problem as they begin new satellite programs. Satellite technology is expensive and highly centralized among a few players. Due to geo-political realities, there are financial, political and technical barriers to acquiring space technology and developing national expertise in this area. Some countries seek to overcome these barriers by forming partnerships with foreign companies to procure both satellite systems as well as training for local engineers. This research explores the benefits and challenges of such an approach. The research technique uses both qualitative and technical analysis to empirically explore the case studies and derive lessons for future satellite programs. The paper also highlights the growth of technological capability in satellites among African countries.