Chapter X

The Role of New Connectivity Options in Information Infrastructure Development in Sub-Saharan Africa

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INTRODUCTION

The greatest difficulty in providing telecommunications services in Sub-Saharan Africa has been the establishment of a comprehensive national telecommunications infrastructure. With the majority of the population rurally based, extending the coverage of the public network within African countries continues to be an expensive and time-consuming proposition. Further, demand for such services has rapidly exceeded supply and the infrastructure has necessarily, and for practical reasons, been concentrated in urban areas. However, a global shift in the technological paradigm of telecommunications development has opened up opportunities for African countries to rapidly deploy information infrastructure and facilitate the achievement of universal access objectives.

This chapter examines innovative telecommunications connectivity options, in particular fiber optic submarine cable and satellite systems, emerging on the African continent and asks how they can contribute not only

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to improved telecommunications, but also to the broader development of information infrastructure within the region. It is argued that if less developed countries and regions are to implement telecommunication networks and information services that will serve their interests, they must prioritize development objectives that rest firmly in their particular economic, political, cultural and social context.

NEW CONNECTIVITY OPTIONS

Satellite Projects

The application of satellite technology to telecommunications transmission appears ideally suited to the Sub-Saharan African region. Satellite systems can be used to provide basic telephony as well as radio and broadcast television with the principle advantages of reliability and durability. Capable of installation wherever necessary, they are considered to be well suited to the African environment (Gifford & Cosper, 1998). For example, small, low-cost earth stations such as those used to provide rural telephony with domestic satellites can provide isolated regions with voice and data communications. However, there is huge international disparity in the availability of satellite services. Most satellite systems serve the northern hemisphere and extend from the east to the west, leaving the southern hemisphere grossly underserved. One of the causes of this unevenness has been the mechanism by which satellite segments are allocated.

The International Telecommunications Satellite Organization (INTELSAT), who up till 1984 operated two thirds of all intercontinental message traffic, keen to maintain its free market ethos, disperses satellite segments on a "first come, first served" rather than an equitable basis. Partly as a result of this bias, and also resource issues, there is now a huge disparity in the satellite communications capabilities of the developed and the developing world. As of 1993, there were some 184 communications satellites in geosynchronous orbit. Of these only a small number had been launched by developing countries,[1] severely limiting the capacity of developing countries to exploit the benefits of satellite technology. This is compounded by the fact that Africa remains the only continent without its own regional satellite system. Thus, though practically all countries in Sub-Saharan Africa have satellite earth stations, the technology has yet to be fully exploited. Rather, the high cost of using satellite telephony has restricted access to a handful that are willing to pay up to US$3 per minute for the privilege.

In an attempt to resolve the lack of indigenous satellite communications capacity the Regional African Satellite Communication System (RASCOM)

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