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assignment 2 (Satellite CONNECTIVITY)

ICT In africa

**1. CITATION/REFERENCE:**

J. P. Nsengimana, “Satellite Connectivity – The Key to Africa’s Digital Transformation?”, Intelsat, VA, USA, White Paper, 2023. [Online]. Available: https://www.intelsat.com/wp-content/uploads/2022/11/SatelliteConnectivityTheKeytoAfricasDigitalTransformation.pdf

**2. AUTHORS:**

The author of this work is Jean-Philbert Nsengimana. His academic achievements include a Master’s in Software Engineering and ICT from the University of Rwanda, an MBA from SP Jain School of Global Management and a Master's in Public Administration from Harvard University. Professionally, he has served as the minister of ICT in the Government of Rwanda for 6 years and is currently the Chief Digital Advisor for the Africa Centres for Disease Control and Prevention.

**3. FUNDING AND CONFLICTS OF INTEREST:**

This research was funded through a grant extended by Intelsat. Intelsat is an organization offering satellite connectivity solutions. This is clearly a conflict of interest.

**4. PUBLISHER:**

The publisher is Intelsat, a satellite network company. The article is a white paper attempting to introduce satellite connectivity and the socio-economic benefits it could bring about in Africa. Being a white paper, it is unlikely to have been peer-reviewed or vetted.

**5. PURPOSE:**

The white paper aims to persuade the reader that satellite connectivity will massively benefit Africa’s economy and society by showing (1) how it will solve the Internet connectivity gap in Africa and (2) specific areas of its application where it can cause (or is already causing) positive socio-economic impact.

It is also possible that the underlying motive behind the research is to encourage funding of satellite connectivity. We can see this from (1) its being funded by Intelsat, a satellite Internet provider, (2) the paper’s almost purely positive tone about satellite connectivity and (3) the fact that, of the four policy recommendations given, two are about funding for satellite connectivity.

**6. RESEARCH METHODS:**

The research method is a literature review. The reviewed literature includes news articles, case studies, reports (like GSMA’s “The Mobile Economy 2022”), company websites and articles, online articles and World Bank data.

A big assumption the paper makes is that access to the Internet will result in use. This, looking at current data, may not be the case.

**7. MOST IMPORTANT FINDINGS:**

The most important findings of the paper are the following.

First, satellite connectivity is better than the traditional terrestrial backhaul for providing access to the 60% of Africans living in rural locations. The installation of terrestrial backhaul infrastructure in rural areas is hindered by challenging terrain, very long distances and consequently impractically high costs. This, according to the author, has led to the high connectivity gap in Africa. But satellite Internet is not affected by challenging geography or long distances and therefore, the research says, satellite connectivity is the best solution for closing the connectivity gap in Africa.

Second, the adoption of satellite Internet has the potential to greatly improve Africa’s socio-economic status. The research mentions the following areas where this impact may be felt: in education (by providing Internet access to students in rural schools), in health (by enabling e-health in rural areas and providing Internet access to rural hospitals), in finance (by providing mobile broadband connectivity and therefore access to mobile banking), in agriculture (by providing farmers in rural areas with Internet access and therefore access to information they can use to improve efficiency), in emergency assistance and in entrepreneurship.

**8. WEAKNESSES:**

A weakness of the paper is that its findings on the socio-economic benefits of satellite connectivity for Africa depend on the assumption that increasing Internet access will result in an equal increase in Internet use. This may not be the case. The GSMA “The Mobile Economy – Sub-Saharan Africa, 2023” report shows that 59% of people in Sub-Saharan Africa have access to but do not use mobile Internet because of barriers like affordability. If the same is to happen with satellite Internet, then the proposed benefits of satellite connectivity will barely be realized.

Another weakness of the paper is that it does not consider the cost of satellite connectivity, especially to end-users. Given that satellite Internet costs significantly more than (1) traditional Internet to end-users (even with current innovations), (2) that affordability is already a barrier to Internet use and access, and (3) that the main target for satellite Internet is people in rural locations who usually have relatively low income, makes the cost of satellite Internet a major barrier to its adoption. However, future innovations in technology and business models may make satellite Internet more accessible.

**9. BROADER IMPLICATIONS:**

This white paper shows the presence of innovations tackling the Internet access and use problems in the world, especially in Africa. Hopefully, it will spur more innovations tackling barriers like affordability which prevent Internet use even where there is access.

Secondly, the socio-economic implications of satellite connectivity in Africa may not be as significant as presented in the white paper given that (1) the coverage gap in Africa is only 15% [1] and (2) there are many barriers to Internet use (like affordability) that prevent 59% of people in Sub-Saharan Africa from using the Internet even though they have access [1].