The current private sector consortium model for the East African Submarine System (EASSy) will not deliver a paradigm shift for the Info Communications Technology (ICT) sectors of the economies that it will serve. This brief proposes that EASSy should instead be implemented using a Public-sector Private-sector Partnership (PPP) to create a regulated utility that will result in such a transformation.

Global economic growth and prosperity is being driven by a transformational trinity[1] of: technology, liberalization, and globalization[2]. Africa has to a large extent missed out on this growth, the causes and cures for which were most recently articulated in “Our Common Interest”[3] and debated at length at the G8 summit in Gleneagles. It is the most recent of a vast body of literature that clearly documents: the important role of ICT in economic growth and the part that can be played by PPPs in implementing large scale infrastructure projects in Africa.

The growth of the Internet/ICT in Africa has been severely constrained by poor infrastructure and the high costs of international internet connectivity. The rapid deployment and exponential growth of GSM networks in Africa has demonstrated that using appropriate technology the private sector can build reliable local telecommunications infrastructure to service the needs of society. As with mobile phones, wireless technologies are rapidly overcoming the problems of poor data infrastructure. However, the absence of an international fiber optic cable connecting eastern Africa to the rest of the world has been recognized by regional governments, Nepad and donors as a key infrastructure required to overcome the problem of high international Internet connectivity costs (the cable is referred to as EASSy).

The complication is that while the current consortium structure of EASSy will probably succeed in building a commercially viable cable, it will not result in a paradigm shift in the Internet/ICT industry.

Competing in a global economy requires the cost of internet connectivity to be globally competitive. Benchmarking the prices of EASSy against satellite pricing is irrelevant if the results do not meet these criteria. EASSy may well reduce connectivity costs from the current US$ 3,000 per Mb to US$ 2,000 or even US$ 1,000 per Mb[4] but if connectivity costs for operators in Europe and the US are only US$ 10 per Mb[5] then the costs associated with EASSy will not result in a globally competitive ICT industry in East Africa[6].

A “back of the envelope” calculation serves to illustrate this point. In the UK, BT Online, VirginNet, and others charge circa US$ 30 per month for a 512Kb ADSL connection. Their direct cost per customer for upstream connectivity is circa US$ 0.10 per customer (US$ 10 per Mb shared by 100 customers). At the current US$ 3,000 per Mb (using VSAT) the upstream connectivity costs for say Africa Online to provide an equivalent service in Nairobi would be US$ 30 per customer (US$ 3,000 per Mb shared between 100 customers). With a difference in cost base of 300 times it is no wonder that there has been no dramatic takeoff in ICT in Kenya. The impact of EASSy reducing the cost base from the current US$ 30 to say US$ 15 per customer may well represent a 50% reduction.
in costs for the ISP, but it is still irrelevant when benchmarked against a cost of US$ 0.10 or less paid by ISPs in the rest of the world. It will not make Kenya or East Africa globally competitive.

The evidence from a similar consortium cable (Sat 3) along the west coast of Africa further supports this position. Several studies have documented the failure of Sat 3 to significantly drive down international connectivity costs, even in large relatively sophisticated markets such as South Africa.

It has been argued that pricing issues can be resolved after the cable has been built. Analysis of the incentive structures that the consortium model creates shows that in fact this would not be feasible regardless of the level of regulatory commitment to doing so.

It has also been argued that it is too late to change the current model and that further delays in implementing EASSy should be avoided at all cost. This is misleading. Restructuring EASSy could be achieved very quickly and easily. Today’s consortium members will become the customers of tomorrow’s regulated utility. All the due diligence already done remains valid for the new structure and will not have to be repeated. The only change is in the ownership structure of the cable itself. Furthermore research suggests that the regulated utility model would have a lower risk profile than the consortium model and will therefore be easier and cheaper to finance.

Given this market failure it is upon governments to intervene [vii]. The central proposition of this paper is that a well structured PPP[viii] would be the correct vehicle for such an intervention. Instead of a private sector driven consortium, the PPP could be implemented as a regulated utility which would allow incentives of all parties to be aligned in a way that maximizes returns to society as a whole[ix]. Arguably this is exactly the sort of growth generating infrastructure project envisioned by the authors of “Our Common Interest” and it would therefore likely attract considerable donor support.

The cost of building and operating the cable for 20 years is circa US$ 250m. This amount is small compared to the economic benefits that the cable could bring if incentives are correctly aligned. Nepad’s E-Africa Commission could issue a tender soliciting private sector bids to build and operate EASSy. Since the capacity of traffic that can be transmitted on modern fiber optic cables is virtually unlimited, national governments could set pricing models on the basis of “cost recovery” rather than on the basis of “bandwidth utilization”. Private sector financial instruments could then be used to “back load”[x] this cost recovery to stimulate market growth early on in the lifecycle of the cable. A PPP structured as a regulated utility will align the incentives of all parties towards achieving a common goal.

* EASSy Operator incentives. Cable operator’s incentives are to operate the cable as cheaply and as efficiently as possible to maximize returns on their fixed price “regulated utility” contract.
* Telecommunications Operator incentives. Telecommunication operator’s incentives are no longer to restrict supply to maintain high international prices as is the case with the consortium model. Instead their incentive is to maximize subscriber numbers and consumption[1]. Their best way of achieving this is by building local infrastructure and lowering rates to encourage uptake by a larger portion of the consumer pyramid.

* Government incentives. Government’s incentives are to maximize returns to citizens from the existence of the cable rather than to maximize revenues from capacity sold on the cable (as is the case with the consortium model). Their best way to achieve this is to promote the growth and use of e-governance and e-education with all the associated benefits to citizens.

* Citizen incentives. Once international connectivity becomes a commodity, uptake of ICTs shifts from being supply driven to being demand driven and all the other benefits then follow.

If governments fail to act now East Africa will be capacity constrained for the next 20 years. Conversely the courage, vision and hard work to restructure EASSy now will create a regulated utility that will lead to a paradigm shift in ICT in East Africa which will in turn become a driver of regional economic growth and prosperity.

[i] Professor Andrew Scott, London Business School
[ii] That being the case solving the problem of high international connectivity costs through regulation is unrealistic. A return to something like the old ITU settlement system for international telephone calls or a global settlement system based on packets of data transferred (as is being proposed through WSIS) would be a retrogressive step and is unlikely ever to be implemented in a liberalized, globalized economy where the rest of the world is moving in the opposite direction.
[iii] “Our Common Interest” was the report published by Tony Blair’s “Commission for Africa” and formed the major input to the G8 discussions on Africa held in Gleneagles.
[iv] Experience on Sat 3 is that consumer elasticity is such that the cable operator is able to maintain pricing virtually the same as or at most marginally below that of satellite. Financial analysis of the EASSy consortium pricing (at US$ 5m for lifetime use of an STM1, 155Mb) supports the view that the outcome on EASSy will be similar.
[v] Global transit capacity is available at virtually any major global Internet exchange such as London, New York, or LA for under US$ 10 per Mb. Further if transit is available at this price then owning and operating a global network must cost less than this price.
[vi] The Telecommunications Service Providers Association of Kenya, AFRISPA (Africa ISP Association, and, Packet Clearinghouse (a US based NGO which specializes in global connectivity development) have all articulated this view.
[vii] The EASSy consortium model has been blessed with very good PR for being a “private sector” initiative, but if a market failure exists then the market is unlikely to maximize returns to society. Being a private sector driven project does no in itself confer any economic benefits to the country.
Although proponents of the existing consortium are calling it a PPP, it is not. The goals of the consortium are to create a commercially viable cable, while the goals of government should be to correct the market pricing failure. These goals are mutually exclusive and create incentives that are misaligned.

A maritime fiber optic cable servicing an underdeveloped market is a natural monopoly (marginal costs are virtually zero and always below marginal revenue and average cost) and a competitive pricing outcome is impossible hence the need for a regulated utility.

Back loading (a reverse of Gordon Brown’s IFF idea) would mitigate the uncertainties related to calculating the latent demand for Internet capacity in a world where capacity is not constrained (as would be the case with the regulated utility model).

Once the short-term incentive for generating rent from high international connectivity has been removed, operators are able to focus on their real source of value creation which is by building and operating local infrastructure.

Richard Bell (Kenyan Citizen)

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