

Creating and Operating National Agricultural Information Exchange Points

Executive Summary

1) Concept: Create and operate a national information exchange point (NIXP). This service would collect currently existing domestic agricultural information and help in the production additional agricultural content suited for the national audience. In countries where an IXP (Internet Exchange Point) exist, a hosting site connected to this national backbone would be created. In less advantaged nations, the content would be hosted at all the significant ISPs (Internet Service Providers).

2) Rationale: This year the ITU called for the creation of IXP (Internet exchange points) as a means to strengthen national and regional Internet traffic. A 2003 Probe Research report reported that in 2001, 71% of all European traffic stayed in Europe; whereas, only 8% of African traffic stayed in Africa. Ironically, African ISPs pay up to 100 times more for international Internet connectivity than do their counterparts in North America and Europe.

The ITU notes that it may be a long time before Internet costs equalize. Firstly, some national governments and some international bandwidth providers believe it's in their economic interest to use their monopoly powers. Secondly, the heavy use of satellite-based connectivity disaggregates Internet traffic and thus reduces the volume of traffic that would either go through fiber optic sea cables or through satellites. This makes the African Internet user population appear even smaller than it already is and thus reduces the incentive for other firms to provide much needed competition.

The idea of creating IXP's in Africa is not a new one, but what has been lacking has been the local content. The consolidation and increase in agricultural content on this national infrastructure helps to support the country's Internet efforts while it synergistically helps in the creation of a mechanism for the efficient distribution of badly needed agricultural information. Naturally, once this system is in place, nationally oriented content for education and health would also be candidates for national hosting.

Evidence the project can be successful: The norm for the world outside of Africa is that there is a natural progression to a more localized Internet. In this regard, this project would be helping with a natural progression that should be taking place normally.

As important as it is to create a comprehensive database of locally relevant agricultural information, the full benefit of collecting this information only comes when the smallholder farmer can access it. Digital Green's peer-created videos and Mali's market information system are two examples of agricultural information that smallholder farmers find valuable.

African nations often have untapped Internet connectivity. Urban areas frequently have wireless Internet providers and cell phone providers frequently have nationwide data networks as supplemental features to their voice services. In both cases, the average person cannot utilize these services due to the high costs. As mentioned before, these high costs are primarily the result of the abnormally high charges for international Internet connectivity. If one were to remove this fee by creating a domestic Internet rate – much like a local and long-distance call – users may well find appealing the currently underutilized connectivity options.

In short, we know that a move to local content is a normal development process. We know that smallholder farmers – not to mention government agencies and universities – want agricultural information in digital format. And, finally, the opportunity to access a national repository of agricultural information is currently available.

3) Expected benefits of the project: This project has the potential to dramatically increase the access to the agricultural information. In Mali the design team heard farmers and wholesalers describe the improvement in market efficiency and product pricing for the products being monitored. The creation of a national Internet provides avenues by which other projects can transform the agricultural environment.

Sustainability and scale: The technical aspects of this project are easy to scale because the addition of processing and storage capacity is easy and inexpensive. The main issue will be to bring local content into this hosted site. The majority of the work will be to get the first large collection of content online. As the site contains more information, providers of agricultural information will be eager to pay for their content to be developed and hosted. At some point, this site could be sold to a commercial vendor or to a consortium of stakeholders. The ultimate goal is for this service not to be necessary due to the proper functioning of Internet dynamics within African countries.

4) Projected costs of the project. The initial project would involve three African countries: Mali, Zambia, and Kenya. Each center would require two million for the first year. Approximately, one million would be hardware and facilities and the second million would be for staff, legal and governmental fees, and for content accumulation.

5) Measures of success. There are many internal measurements that can be used to determine success. Some possible site generated statistics are the number of users, the amount and types of content, and the average ranking of content. Some external measurements could be the name recognition of the system by key stakeholders, especially that of smallholder farmers. In addition to

name recognition can be percentage of usage, user experience and the likeliness of using the same again.

6) Risks: The most significant risk is that of governmental interference. IXP's in Africa have had problems in the past because the government telecommunications entities have felt threatened. While this appears less true today than it once did, anything that appears to create a new system of communications with a nation has to be concerned with how it is viewed by the government. While this project is not intended to create IXP's, it may have to be linked to the development of such a center so that the content may be made available.

The second major risk is that local data providers may be either unwilling or unable to create a domestic pricing tier for users of the national agricultural database. This would greatly restrict the ability of smallholder farmers to access the information. This risk should be fairly remote in that Internet providers have to pay so much for international connectivity that they cannot add a significant profit margin. Domestic traffic, while priced far lower will be based on their cost of operations and thus they may actually enjoy higher profit margins.