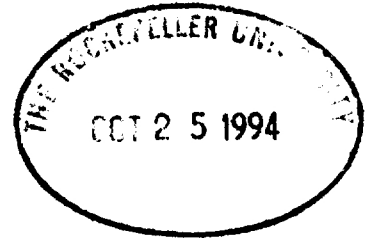


Josh

DRAFT

October 22, 1994

To: Colleagues
From: Lloyd Etheredge
Re: Good News (Maybe!): African Internet Connections



May I ask your advice?

Last year, I wrote "Somebody ought to . . ." memos to several foundations, suggesting they might research private data networks in Africa (e.g., connected with international tourism, banking, CNN, etc.) These, I thought, probably were run by knowledgeable people and had spare capacity. If so, I thought they might add Internet links at marginal cost, less than building a completely new infrastructure.

Now, since Federico Mayor accepted the vision of the Rockefeller University working group, and completing Internet connections to Africa is a high priority, I decided to take my own advice. [I also think we have a responsibility - before turning to scarce philanthropic funds - to explore private options.]

Good news - based on a couple of days of calling around, here are my notes. I'm circulating this very preliminary memo privately, to ask for additional leads and contacts . . . Who should I call, that I'm not thinking of?

If the interest in building private-sector Internet nodes continues to look good, perhaps a 1-day meeting could get things underway. UNESCO and Internet representatives, other interested government and international organizations (e.g., USIA, NSF, World Bank, Canadian agencies with an interest in African communications) and foundations, and the potential vendors, to assess if there is a viable package (to all sites) and what needs to be added?

[Note: Background discussions are important to organize such a meeting. The Internet Society's (Larry Landweber et al.) vision and leadership have been invaluable in identifying a new technology of wireless modems. These allow Internet connections from a central downlink site, without requiring local telephone lines (often, of limited capacity and reliability). Their proposal is not widely known. But I have found that it gives - to current owners of private data systems - a lowcost option for a key element in providing Internet services in Africa and other UDC's.]

At this point:

A. There are at least six good prospects. ["Good" means: a.) a system linking sites in all (or most) of Africa; b.) spare capacity; c.) a preliminary discussion has indicated an interest to explore adding Internet services.]

1.) SITA/ITS. SITA (Paris) is responsible for SABRE and other components of the global airline reservations' net, which is almost everywhere. They're a voluntary society without a direct interest in new business. However, it turns out that they sub-contract operations to ITS (International Telecommunication Services), a for-profit company, which is interested in the possibility (i. e., given that there is anticipated demand) of adding Internet services. Status: I've spoken with Mr. Charles Caltagirone in their NYC office and have sent background materials.

2.) Amalgamated Bank of South Africa Network. The world's major banking network (SWIFT) carries hundreds of billions of dollars of transactions/day. For security reasons, they don't want any outside groups to use the system.

However, it turns-out that, with Nelson Mandela's leadership, the dedicated bank satellite system in South Africa (used, primarily, only in the mornings for video-conferencing and training) is to be expanded to provide educational links throughout the country. There is an advisory board of the Presidents of the country's institutions of higher education, and there have been preliminary contacts in this country (e.g., Black College Satellite Network) to begin securing programs and other links to educational resources.

The satellite link probably can cover much of the continent, beyond the borders of South Africa. Status: I have sent initial material about Internet links to Dr. C. J. Reinecke, President of Potchefstroomse University of Christian Higher Education, who represents President Mandela and the Network.

3.) CNN. CNN satellite broadcasts are received by all major hotel chains throughout Africa. The satellite dishes and personnel are a fixed investment, and if Internet connections require only adding a black box and wireless modem, the add-on business might be attractive. CNN's London office (which handles Africa) has offered to explore the idea with the hotels. [The hotels also rent meeting rooms and, now that the Internet's ST-II streaming protocol is available & allows reasonable videoconferencing, the hotel chains also might be especially interested in a package that could allow them to be sites for World Bank training programs, 2-way participation in international scientific meetings that are taking place at other hotels in their chain, on other continents, etc.] Current status: background materials forwarded to Edward Boating,

Director of the London sales office.]**

4.) **AFRONET.** The International African Communications Network is a private company that has signed contracts to launch two new private communication satellites (in 1995) to serve Africa. They are keenly interested in new business, and especially think there will be a growing demand for Internet connections now that governments, corporations, and educational institutions are beginning to use it internationally. Status: background information provided to Dr. Bruce Lusignan, Director of the Communications Satellite Planning Center/Program for International Cooperation in Space at Stanford University, an adviser to the project; and also to Edmond Adjovi, President of AFRONET.

5.) **Reuters.** Reuters runs a private satellite and data net to almost every country in the world - every site with a newspaper that subscribes to its service. Status: Senior engineers at Reuter's Haupage Technical Center think a packet-switched Internet system might make a great deal of economic sense: they will check to find names at the international management level. [Note: If this doesn't go through, the next step is GTE SpaceNet in McLean, VA. They are the systems integrator and operator for Reuters' 1,000 VSAT net. GTE SpaceNet is a leading for-profit company in the industry & on the lookout for new business.]

6.) **General Electric Information Services.** GE Information Services is one of several major systems integrators (operators) who contract for private business satellite channels. I've started with GE because contacts tell me they operate packet-switched business systems into Africa. Status: the US headquarters in Rockville, MD is establishing contacts with their headquarters for African services (in Amsterdam).

B. Besides these six good prospects, there are probably twice as many commercial vendors who should be contacted. For example (beyond GTE SpaceNet, mentioned above):

1.) Comtel-Spar in Santa Maria, CA (they are the system integrators for Liberia, Mozambique, Zambia and Yemen and also several systems in mainland China);

2.) EDS (which manages internal communications of Marriott hotels, General Motors' worldwide operations (with 10,000 VSATs), etc.;

3.) British Telecom, Cable & Wireless, and French Telecom (about services to former colonies) and AT&T (which has an undersea cable around Africa under construction);

4.) BBC and MTV, both of whom are completing pan-African television channels;

5.) IntelSat. And PanAmSat (which gave a very attractive offer to the Internet Society and leases satellite capacity throughout Africa). Either might wish to develop private packet-switched networks for a wide class of users;

6.) The organizers of the new generation of low-earth-orbit satellites that offer point-to-point links. There is not much demand over Africa; thus, there is a great deal of spare capacity that might be sold at low marginal cost in a competitive market. a.) Iridium (Motorola) has raised the capital it needs and will begin launching soon; and b.) Microsoft (Gates/McCaw) 480 satellite system probably will have an African capacity even in its early phase. However, the good immediate prospects include c.) Orbital/-Teleglobe [Teleglobe is Canada's entry into global satellite & cellular systems] which will launch 26 satellites in low earth orbit next year (\$146 million) and 10 in 1996 for a system that will allow limited point-to-point text & data services globally; d.) VITA (Volunteers in Technical Assistance) in Rosslyn, VA.

7.) At least two governments have significant capacity on the continent. The USIA has a prepaid INTELSAT channel, 24 hours/day, for its WorldNet television channel, plus downlink sites at each Embassy and Legation. I am continuing discussions with USIA's planning groups: part of this capacity probably can be used, at least for the one-way outbound digital links of startup projects. And the Russian government has announced the availability (for lease or sale) of a former military satellite over the continent.

C. Most of the operators of these private data networks are truly global, in addition to African connections. Thus, a "heads up" about what is afoot for global science and education could be timely and helpful to stimulate their plans to build Internet services on a wider scale.

