traffic to North America goes from Warsaw to the Nordunet in Stockholm via satellite and then it goes to a site in Virginia for North American distribution.

Like the Kyiv Freenet, the UARnet offers regular electronic mail service, but it also supplies other INTERNET applications such as FTP and TELNET with World Wide Web access to come in the near future. The UARnet also differs from the Kyiv Freenet in its approach to charging a user fee. A user of the UARnet is charged a basic fee of between three and five dollars $ US a month and a transmission charge of three cents a kilobyte. The administrators of the UARnet feel that since they offer more services than the Kyiv Freenet, a user should reasonably expect to pay for these extra features. The UARnet offers the user either a dial-up method of connection or a direct line connection to its network. The dial-up method is much cheaper and it is primarily for those people who only want to send and receive electronic mail messages. The direct line connection requires the installation of a permanently connected data/phone line that allows a user to set up their own INTERNET site. This is most often used by large institutions that desire to connect their internal computer network to the INTERNET.

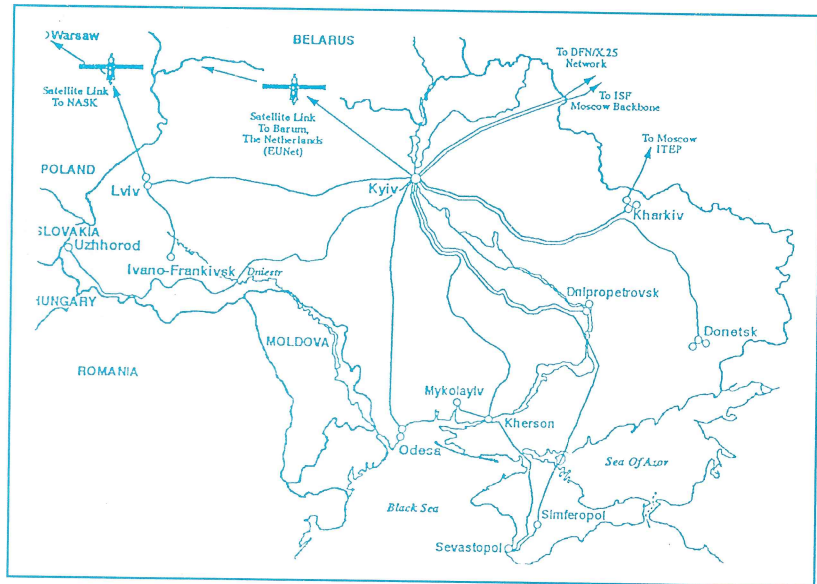## CSIH Ukraine INTERNET Project

I had a chance to use both of these INTERNET services while I was in Ukraine during the months of February and March of this year. I had gone to Ukraine as a volunteer representing the Canadian Society for International Health, one of the four partners in the Canada Ukraine Partners Program. My task was to assist seven Ukrainian health organizations gain access to the INTERNET. Five of the health organizations were in Kyiv and one organization in Lviv and Odessa. The health organizations in Kyiv were connected to the INTERNET through the Kyiv Freenet and the health organization (Lviv Regional Psychiatric Hospital) in Lviv was connected to the UARnet. The health organization in Odessa (Veselka) was connected to the INTERNET through a long distance phone call to the Kyiv Freenet.

Despite the very poor quality of the telephone lines and switching stations, the INTERNET connections worked remarkably well thanks in no small part

to the use of the US Robotics Sportster modems. These are high quality, yet reasonably priced modems that are able to effective deal with the poor line quality of telephone lines that computer users in Ukraine must deal with. The establishment of the Kyiv Freenet and the UARnet

HOOKING UP IN UKRAINE: UN pilot project links up Ukraine's academic and research community with government ministries and state committees.

has already made a change in the way many Ukrainian individuals and organizations communicate with the outside world. In addition to the Kyiv Freenet and the UARnet, there are also many commercial INTERNET providers that are being established to serve the needs of commercial and business users. Some of the commercial users are well established (such as the INTERNET provider RELCOM) while most of the others have just come upon the scene. The cheapest INTERNET provider appears to be GLASNET which has a basic charge of $US 25.00 a month. Glasnet is often used by private users and non-governmental agencies.

Most of the commercial INTERNET providers still use the old telephone links through the Russian Federation, this is not the most desirable method of INTERNET transmission. I asked Alexander Saban of the UARnet whether there are any plans to have the commercial INTERNET providers contribute to the operation of the UARnet in exchange for the use of the network. Alexander said that this is an option that has not been resolved at this time. However, when the funding runs out for both the Kyiv Freenet and the

UARnet, there may be no choice but to allow the commercial INTERNET providers access to the network to help cover its operating costs.

The INTERNET started out as an academic and research network in the west, but over time, commercial users were allowed access to it if they also contributed to its growth. Just over a year ago, for the first time commercial users now represent over 50% of the INTERNET. As Ukraine emerges from the broken shell of the former Soviet Union, the problem of both operating and funding its own INTERNET system will be just one of many such problems that will need to be resolved.

Mike Kostiuk is an Ottawa-based INTERNET consultant. In 1995, he was a volunteer with Canadian Society for International Health, one of the CUPP partners, on a project to assist the Ukrainian Ministry of Health, President's National Anti-Aids Committee of Ukraine, Institute of Public Administration and other health organizations in Kyiv, Lviv and Odessa to establish INTERNET communications and provide them with computers and technical training.
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