



VII NAUČNI SKUP O SISTEMU NAUČNIH,
TEHNOLOŠKIH I POSLOVNIH INFORMACIJA

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**INTERNET U JUGOSLAVIJI
I JUGOSLAVIJA NA INTERNETU**

Beograd, 28-29. maj 1997.

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Zbornik radova

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**INTERNET U JUGOSLAVIJI
I JUGOSLAVIJA NA INTERNETU**

Izdavač:

SAVEZ INŽENJERA I TEHNIČARA JUGOSLAVIJE,
BEOGRAD, Kneza Miloša 9

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VII naučni skup o sistemu naučnih i tehnoloških informacija
"Internet u Jugoslaviji i Jugoslavija na Internetu" organizovan je i
materijali za skup publikovani uz finansijsku podršku Saveznog
ministarstva za razvoj, nauku i životnu sredinu.

I IZDANJE

Tiraž: 300 primeraka

Štampa: "Prometej", Zemun

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**PRISTUP INTERNETU I PROGRAM ZA OBUKU: JEDAN MODEL ZA PRISTUP U
HUMANITARNIM NAUKAMA**

**THE INTERNET ACCESS AND TRAINING PROGRAM: A MODEL FOR ACCESS IN
THE HUMANITIES**

Bruce McClelland¹

Apstrakt: U radu je objašnjen program obuke za pristup informacijama preko Interneta (IATP). On zapravo predstavlja jedan projekat za obezbeđenje, uspostavljanje i održavanje potpunog, javnog i trokovno efikasnog IP pristupa informacijama i elektronskoj pošti za školarce u oblasti humanitarnih nauka. Pored obezbeđenja mesta za rad na Internetu i na web-ovima, mi takođe vršimo obuku, pretraživanje i elektronsko publikovanje. U našem pokušaju da kreiramo održive i valjane sajtove, stekli smo značajno iskustvo u savladavanju teškoća u vezi sa obezbeđenjem pristupa informacijama sa onih mesta na kojima je, pored ostalog, loša ili ozbiljno redakovana telekomunikaciona infrastruktura.

Ključne reči: pristup Internetu, obuka, web prostor, humanitarne nauke

Abstrakt: The Internet Access and Training Program (IATP) is a project devoted to the goal of establishing and maintaining cost-free, public-access sites which provide full IP access and email services to scholars in the humanities. In addition to providing a venue for work with the internet and World Wide Web, we also provide training in information search and electronic publishing. In our attempt to create viable sites, we have obtained a great deal of experience overcoming the difficulties of providing access in places with impaired or seriously reduced telecommunications infrastructure, among other problems.

Keywords: Internet access, training, Web Site, humanities

As the Internet continues its phenomenal growth around the globe, it is, like the advent of other communications technologies before it--including the invention of movable type--bringing many advantages to those fortunate enough to have access to it. At the same time, the manifest advantages conferred by having rapid access to all kinds of information are gradually creating an information dependency that, in the earlier stages of the Net's development, are characterized by gross inequalities between the "haves" and the "have nots."

Thus, in parts of the world where the basic telecommunications infrastructure was not previously in place to handle the technical demands of bit-intensive digital information transmission, it has sometimes been possible to "leapfrog" local constraints by moving to satellite, radio, laser, infrared and other technologies to obtain high-speed access to the

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Net. Yet despite the growth of the number of Internet service providers, the distribution of access has not generally been equitable, and there remain large groups of potential users, for whom access to the Internet could be considered extremely important, who still do not have open or robust access even to electronic mail, much less to full IP and the World Wide Web.

In many parts of Russia, for example, as well as in the NIS in general, there are sectors of the scholarly community which still do not have a means of communicating with their counterparts in other parts of the world, nor do they have means of locating Internet resources or providing their own. In an attempt to help solve this problem, two years ago the International Research and Exchanges Board (IREX) applied for and obtained funding to establish a number of "public access" Internet sites in nine countries of the NIS and Russia, which are intended to provide Internet access free of charge to scholars and other affiliates of the local host institutions. This program, known as the Internet Access and Training Program (IATP), is now in its third round of funding, primarily from the United States Information Agency (USIA), and has been successful in providing thousands of users with cost-free email and Internet access, along with training in Web page design, information retrieval, and other activities associated with the Internet.

Although the IATP program was specifically designed to be implemented in Russia and the NIS, because of its general success in doing what it was intended to do, it may serve as a model for organizations in other regions with a need to supply Internet access to underserved groups. I would therefore like to take this opportunity to briefly describe how it works, and to point to some of our successes. The failures I will gladly discuss at another time.

Organization of IATP Public Access Sites

At the outset, it is important to emphasize that the program as it currently exists was established with a particular mandate, namely to provide the alumni of exchange programs funded by USIA with a way to continue to communicate with the colleagues and contacts they established in the United States while on exchange, as well as to assist them in publishing the results of their researches and to stay abreast of research published on the Internet. While our public access sites do not at all discriminate against users who are not USIA alumni, the selection of host institutions, which are called upon to provide space, personnel, and usually some sort of computer equipment, favors those with a number of exchange alumni in affiliation.

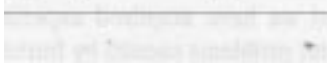
There are, obviously, more requests for Internet access than there are resources to create enough "pub sites" to meet everyone's needs, and therefore our program is operated as an open competition. Institutions meeting certain qualifications are invited to submit applications, in which they outline the purpose of the organization and the number of people served, and detail both existing computer equipment and the contribution that they intend to make to the program. These applications are then evaluated and ranked according to several parameters, including the cost of establishing the pub site versus the number of people who will possibly benefit. Another significant factor is location: while universities in Moscow, for example, can frequently provide more in the way of computer

equipment, that city is already well-served with Internet providers and educational institutions with robust access to the Net, especially in comparison with the poorer institutions in the outlying regions. With limited funds, it is extremely important to "spread the wealth" as far as possible, providing users who have virtually no alternative with free access to the Net.

Before the institutional applications are evaluated, we place on the ground an American volunteer, or "Fellow", who must have not only significant expertise in the use of the Internet, but also strong skills with telecommunications, system administration, and computer networks in general. Of course, since these Fellows are currently assigned to cities in Russia and NIS, Russian-language skills are also required. The IATP Fellows are given a stipend and a one-year contract, in which they are obliged to accomplish several things:

- secure continuous low-cost IP access from a commercial or non-commercial provider;
- evaluate institutional applications and establish working relationships with four or more local institutions (e.g. universities, institutes, libraries, NGOs) willing to provide free Internet access and training on site;
- find at least one local person with strong technical, Internet, and English language skills to function as a trainer and system administrator after the end of the Fellow's tenure;
arrange for the purchase and installation of any computer and network equipment promised by IATP;
- organize training sessions in the use of electronic mail, Internet search, and Web design and publishing;
promote the availability of the public access site, and take all steps to guarantee self-sustainability.

In the earliest phase of this program, almost all of these tasks were extremely difficult to accomplish. However, in recent times, as interest in the Internet has grown, it has become somewhat easier to secure Internet services at a reasonable cost, and to find a local person with enough technical skill--and enough enthusiasm!--to ensure the continuance of the pub sites beyond the end of the Fellow's year. Yet there are still many places where problems that might seem fairly easy to solve in Moscow, for example, remain unsolvable without large amounts of money or a great deal of political savvy. This is especially true in those areas where there is a state-run monopoly controlling the telephone company or commercial Internet services. Laws restricting licenses for selected bands of radio air used by radio modems, for example, can impede the establishment of public access sites in places where optical cable is non-existent and the local phone system will not support noiseless communications at speeds necessary for Web traffic (generally held to be around 14.4 Kbs). In states like Kyrgyzstan, the use of satellite equipment is restricted to point-to-point communications within the boundaries of the country only. Obviously, such restrictions challenge the very nature of the Internet, which



is organized as an open form of telecommunications. Nevertheless, our public access sites in Bishkek are among our most productive and creative.

Once the IATP Fellow has signed an agreement with a partner institution, which is obliged to contribute whatever possible to the establishment and maintenance of a public access site, the work of connecting the institution to the Internet begins. At the same time, the equipment is purchased to provide enough places where a number of people can sign up for time at a workstation or at a training session. This generally means developing or enhancing a local area network which is linked to the Internet via the best channel available. More often than not, this means securing a leased line through a pair of phone lines available at the institution, and providing a pair of modems operating at the highest possible speed over existing lines. Occasionally, we are able to find a reasonable provider with direct access to a telecom satellite, in which case IATP is more than willing to provide routers and radio modems in order to take advantage of the more stable and higher-speed bandwidths, which can frequently be broken down among several organizations. In more remote areas, where the telephone systems may be even less stable or more expensive, modified pub sites are established to provide offline, that is, UUCP email or dial-up Internet access.

Our overall objective, then, is to obtain the highest level of Internet access at the lowest cost that efficiently reaches the largest number of productive users. This means that while our first priorities are to establish robust, high-speed links to the Internet in partnership with host institutions in major cities, we will also provide less interactive forms of access to the Internet where there is a clear benefit to doing so and the relative cost remains low. Usually, in the latter case, IATP ends up providing not much more than a pair of 19.2 Kb modems or some training in the use of electronic mail, ftp, gopher, etc.

I should add that one restriction on the use of public access sites which we strictly enforce from our side is that we don't permit any clearly commercial traffic. That is, we do not allow users at pub sites to log on to fee-based information providers, nor do we permit anyone at the host institution to in anyway charge for or limit access to the site. This restriction, which conforms with the wishes of USIA, prevents us from ending up in a situation where we receive free or low-cost IP from a non-commercial provider, such as NATO or the Soros Foundation, which then is sold by one of our clients.

Current Trends

IATP is now fairly stable. In fact, we are just now witnessing the departure of several Fellows, and we are getting ready to place new ones on the ground in several sites. The places where we currently have--or did have--an Internet fellow and at least one pub site include Moscow, St. Petersburg, Ekaterinburg, Khabarovsk, Novosibirsk, Irkutsk, Rostov-na-Donu, Kharkiv, Kiev, Bishkek, Almaty, and Tashkent. The next round of IATP Fellowships has been announced, and includes Tbilisi, Baku, Yerevan, Minsk, and Chisinau. For a complete list of all of our pub sites, and to view the Web pages created at those pub sites, please view the IREX/IATP home page at <http://www.ircx.ru>.

The program is ready to shift its emphasis, now that we have acquired experience at establishing Internet access and solving the fundamental problems caused by bureaucracy

and restricted telecommunications infrastructure. I would like to mention a couple of solutions we have found to connectivity problems that we hope will serve as models for future public access sites. In terms of "content," I would then like to point to the home pages produced at our site in Bishkek as an example of what can be done under the type of organization that IATP possesses. And finally, I would like to mention a couple of directions for the future.

Single-source Providers and NGO Consortia

Two recent developments in Central Asia and the Caucasus region have enabled IATP to simplify the process of obtaining low-cost access in several cities at once, while at the same time improving the chances that the project can sustain itself by spreading the cost of access to other organizations. While the ultimate success of this model has yet to be determined, the combination of streamlining the connectivity process while getting other organizations, each with its own constituency, to participate should allow IATP to start the Internet training phase much earlier. This, in turn, will allow us to build a "critical mass" of enthusiastic users much sooner.

The first development was the establishment of an agreement to work, wherever possible, with two particular non-commercial organizations whose joint obligation is to provide satellite access to the Internet to other non-commercial organizations. Organizations such as NATO and the Soros Foundations may be interested in providing high-end access to the Internet through their satellite dishes, but the problem of supplying connectivity at the local level can sometimes represent a problem, since it involves having someone "on the ground" to oversee all the details of hooking up multiple institutions. Since IATP has a great deal of experience at just this sort of thing, we were recently able to form an alliance with one such group. Under this arrangement, we would supply the equipment and hook-up necessary to create a link between our host institutions, representing a peripheral node, and a nearby satellite dish. Of course, it happened to work out that the group we were working with had satellite dishes in the cities where we intended to establish public access sites anyway. The benefit of this arrangement, of course, is that it minimizes the need for negotiation, guarantees that there will be a reputable supplier of IP access in several cities and countries, and conserves experience, thereby speeding up and simplifying the process of creating pub sites.

The second development, which was originally organized at our pub site in Uzbekistan, was to identify local NGOs that had an interest in obtaining low-cost access to the Internet, but did not have either the technical expertise or the staff to do so. In this case, IATP performed the role of a "middle man," securing a high-bandwidth channel to the Internet and then distributing it to a select group of NGOs, whose contribution to the project was primarily financial in the form of a pro-rated amount, depending upon the anticipated level of access. The formation of such groups provides the advantages of minimizing the burden on any one NGO, thereby minimizing the likelihood that one would drop out for financial reasons, and at the same time, ensuring the ongoing viability of the public access site by increasing interest in its use.

Thus the tendency of the organizational structure of our program is to locate as much of the high level Internet access in a single, reliable and accountable non-commercial organization as possible while striving to ensure sustainability by spreading the financial risk and increasing outreach to end users by forming consortia with qualified NGOs. Unfortunately, in the regions where we have accomplished these goals, there still remains a significant amount of instability, so only time will tell whether such strategies will survive periods of transition.

The Bishkek Site

An English proverb has it that "the proof of the pudding is in the eating." The proof of the value of providing free Internet access, therefore, is to be found on the Internet itself. One of our earliest pub sites, in Bishkek, Kyrgyzstan, now has over 2,500 "registered" users. More than 1,500 people use the pub sites there more or less regularly, for everything from email to Web publishing. I invite you to see for yourself the materials that have been put up on the Web in Bishkek, since a mere description will hardly do it justice (<http://www.irex.org/kfn/index.html>). But I will mention that from a single home page for the IATP pub site in Bishkek, it is possible to execute links *directly* to: a free, up-to-date database of NGOs in Kyrgyzstan; a digest of business and financial news from Bishkek and around the world; professional quality photographs of the mountain ranges of Kyrgyzstan; the Peace Corps (Kyrgyzstan) home page (designed with the help of IATP); the sponsors of IATP, including the United States Information Agency; the home pages of IREX in both Washington and Moscow; and a compendium of materials relating to the 1,000-year anniversary of Manas, the oral epic poem of the Kyrgyz, including history and text of the epic, photographs of rituals, addresses by the President of Kyrgyzstan and other personages, and other fascinating materials. All of this was done under the auspices of the IATP project in just one city, by students and scholars trained in HTML and the use of the Internet. Clearly, the essential ingredients of enthusiasm, pride, and a desire to communicate with the rest of the world are more important than money in this case.

The Future of IATP

It is difficult, at the moment, to reliably predict the actual direction of the Internet Access and Training Program, especially considering that it is subject to several forces which are not necessarily moving in concert, among them the political vagaries of the areas where we have established or intend to establish pub sites, the direction of funding sources, and perhaps most importantly, the direction of the Internet itself. However, all things being equal, our past experience and the current state of the art suggests that the next point of focus for our project will be on providing content rather than connectivity.

In many regions where IATP pub sites exist, there is a good deal of talk about, and a great need for, what is currently termed "distance learning." But it is important to learn to walk before you run. Some areas don't even have electricity for more than half the day, much less a phone line that can be relied upon for more than fifteen minutes, so the technical demands of distance learning may not be met until some time off in the future.

On the other hand, it is time to begin making the Internet a two-way street: while the emphasis thus far has been upon giving scholars and others in Russia and the NIS access to contacts and resources abroad, there has been less support for creating or providing national resources that can be viewed abroad. It would thus seem that the next logical step for IATP, now that a good deal of Internet infrastructure is in place, is to help people create electronic publications such as journals and books, as well as to provide access to information resources such as library card catalogs, archives, and virtual museums. In any case, as new Internet technologies develop and consequently new possibilities arise, the IATP pub sites and their many users will be in an excellent position to benefit from them, since the sites will already possess both the equipment and the knowledge to incorporate important improvements in the ways of exchanging of information. Which, after all, was and is still the fundamental purpose of the Internet.