

AIHA Tech Topic #13: Internet Provider Selection: Criteria and Advice

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Introduction

This Tech Topic has been written by Grigory Naumovets (e-mail: gri@gilan.uar.net or grmail@grmail.sita.kiev.ua) based on his own experience. The names of some ISPs as mentioned in this text are not meant to advertise or anti-advertise their respective bearers.

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Charges

In choosing an Internet Service Provider (ISP), the **charges** for its services would definitely be a key factor to consider. Generally, these charges may include:

- a lump-sum registration fee for connection;
- a charge for calling a specialist to install and set up your connection;
- a fixed monthly charge;
- an hourly charge for time spent online (may be differentiated by time of the day) with a dial-up connection;
- a charge for the volume of data transmitted via a dedicated-line connection;
- a separate charge for e-mail services (mailbox maintenance and volume of messages sent); and
- charges for extra services (Web page hosting, Usenet access, etc.).

In addition, the real Internet budget may include a per-minute charge for telephone connection services as collected by some exchanges.

The price/service list is usually available on the provider's site. You should find out:

- whether taxes are included in the charges stated; and
- the exchange rate at which the charges are calculated and whether these charges depend on the method of payment, etc.

Before choosing a provider who offers the lowest charges (certainly, the most attractive offer seems to be the so-called "unlimited Internet access" at an affordable price), you should carefully examine the entire price list to find out which particular services and features are actually offered for the money and whether you will actually have access to those options that might seem to you "axiomatic" from your previous experience.

For example, the "unlimited access" offered by some ISPs is actually only unlimited to a certain extent -- say, 150 or 200 hours -- with extra charges to be collected for exceeding that limit.

Discussed below are some of the issues that you should clarify with your potential ISP with comments.

Dedicated-Line or Dial-Up Connection?

A dedicated-line connection (via nondial-up telephone line, radio modems, asymmetric satellite channel, etc.) provides Internet accessibility 24 hours a day and would allow you to create your own Web server, but it is typically much more costly than a dial-up connection. You should read the entire price list, with all its addenda and attachments. For example, in addition to fixed and monthly charges for a dedicated line (depending on its capacity), ISPs may charge you for the utilization of that capacity, i.e. for the volume of the data sent and received via that line. You should clear up whether is the case or not. In addition to the charges usually indicated in the price list, a dedicated-line connection would involve costs to install the line, purchase a pair of modems suitable for operation on a dedicated line (modems that are capable of normally operating in a dial-up connection would not necessarily fit a dedicated line) and pay the telephone company a monthly rent for the dedicated line.

A dial-up connection will typically require much lower lump-sum costs and will allow you to change your ISP in a much easier way.

Internet Access Modes

Issues to consider:

- Which connection protocols are supported (PPP, SLIP, etc.)?
- What type of IP address is provided -- static, dynamic or virtual?
- Is it possible to access the Internet direct or you can only do that via a proxy server?
- Which features does the proxy server have ("alien" POP3/IMAP4, NNTP, direct chat, IRC, ICQ, etc.)?

Comments:

Clear up with your potential ISP about the exact name of the **connection protocol** (PPP, SLIP or their modifications such as CSLIP). That information will be essential to set up your connection.

In case of a dial-up connection, many ISPs provide the users with the so-called "dynamic" **IP address** -- an address that will be valid during the current connection session only. During the next connection session, that address can either remain the same or change. (You can determine your current IP address by entering the command *winipcfg* in the Windows95/98 *Start/Run* menu window.) Therefore, you should: (1) decide whether you really need a fixed ("static") IP address and (2) find out whether your ISP provides fixed IP addresses and whether they consider it an extra service that should be charged for separately.

A fixed IP address is helpful, for example, if you want to be able to be called for real-time communication with programs such as *NetMeeting* or *WinTalk*. (A fixed IP address is not needed to use **ICQ** or IRC.) Furthermore, a static IP address is required to subscribe to some

libraries and databases that can only be accessed from the IP addresses stated on the subscriber address list.

You should also find out whether your potential ISP provides Internet access **"direct" or via its proxy server only** (a proxy server accesses Internet resources "in its own name" but "on behalf of the user" and then sends the user the data received). One function of a proxy server is to cache downloaded data. If you or any other user have recently accessed a particular Internet resource and copies of the files are stored in the proxy server's cache, they will be loaded from the cache rather than from the remote server. Usually, this substantially speeds up the data loading process and allows the ISP to reduce the load on external communication lines. Therefore, the availability of a proxy server is a benefit for the users. If, however, the ISP provides Internet access via its proxy server **ONLY** (in which case the IP address provided to the user can even be **virtual**), you should find out the features supported by that proxy server (i.e. which user "instructions" it is able to execute and which ones not). You should also make sure whether the proxy server allows:

- accessing "alien" (i.e. not belonging to the ISP) mail servers with the POP3/IMAP4 protocols;
- accessing "alien" NNTP servers (for using the USENET);
- real-time communication (chat) direct and via the Internet Relay Chat/ICQ servers; and
- accessing other servers such as Real Audio.

You should determine whether these limitations to your opportunities are really important to you. For example, access to an "alien" (i.e. located in the address area of another ISP) POP3/IMAP4 server is necessary to use the mail client installed on your particular PC in order to receive e-mail messages from the mailbox on another ISP's server. If the proxy server does not provide access to "alien" POP3 servers, you can use the Web/POP3 interface provided by some free services such as **HotMail** to receive e-mail messages from there. But, of course, it would be much more convenient to use a "normal" mail client.

Access to "alien" NNTP servers is useful if your potential ISP does not have its own NNTP server or if your ISP's NNTP server does not support the newsgroups of interest to you.

Note that access to the Internet via a proxy server may also result in other limitations to your opportunities, which would be difficult to foresee -- for example, proxy servers do not allow accessing some Web servers in a normal way.

Telephone Line Performance

Issues to consider:

- How many telephone numbers and dial-up lines does your potential ISP have?
- What are the type and maximum speed of the modems used by your potential ISP, as well as the type of the exchange?
- Is it possible to establish a trial connection to assess the connection performance?

Comments:

In case of a dial-up connection, the user should find out:

- (1) whether it is easy to establish a dial-up connection with the ISP; and
- (2) the performance and stability of the telephone connection.

Information on the dial-up telephone numbers and their type (single-channel or multi-channel) is usually available on the Web sites of all ISPs. By trying to dial up these numbers from your conventional telephone in various periods of the same day, you can assess how

often they are busy. (You must check how busy the telephone numbers are if your potential ISP offers an "unlimited Internet access" plan.) Note that the presence of a "busy" signal does not necessarily mean that the input line associated with the dialed number is (or all input lines of a multi-channel number are) actually busy: it is possible that at the moment there just are no free lines to connect your local exchange to that of your ISP and the number will appear to be free if dialed from another exchange. So the answer to the question "Is it easy to establish a dial-up connection with a particular telephone number?" may depend on which exchange you are dialing from. Accordingly, it is better to check if the telephone numbers are busy by dialing them up from the same line or at least the same exchange to which your PC will be connected.

The second question is more difficult to answer since the performance and stability of every connection depend on the types of the modems used by both the ISP and the user, on the parameters of the ISP's and user's exchanges, as well as on the performance of a particular telephone line. The noise level of the telephone line may also depend on the time of the day (due to the varying load on the exchange) and on the season of the year -- because telephone manholes can be poured with water. Many ISPs provide their potential customers an opportunity to establish a trial connection for unlimited time for free or for a small charge so that the users can assess the communication performance. If such opportunity is unavailable, you should try to find out whether your potential ISP has customers who dial up their access-point numbers from your exchange (or at least from a similar exchange) and ask them to share their experience with you. When assessing the performance of a particular connection, consider the speed at which the modems connect with each other and stability of the connection. If the connection breaks off too often, you may want to try to limit the connection speed to see if the connection is reliable at a lower speed and if that speed is suitable for normal operation.

Consider the specifications of the modems installed on the input telephone lines of your potential ISP. If these lines and modems support the V.90 transmission protocol, you can receive data at a speed of up to 56 Kbps via a good telephone line with a modem that also supports that protocol. Even if your modem cannot reach that speed, such an input line may still perform in a more reliable and stable way than "conventional" lines that only support a maximum speed of 33.6 Kbps. (However, it would be desirable to test these "theoretical" considerations in practice, especially if you are connected to an obsolete exchange; connection via a lower-quality input line hosted on the same or a neighbor exchange may appear even better than that via a higher-quality input line hosted on a new digital exchange.) Some ISPs set higher charges for connection via a high-quality telephone line that supports the V.90 protocol as compared to "conventional" telephone lines.

Capacity of External Communication Channels

This is one of the key characteristics of any ISP. In many cases, it is the capacity rather than the speed of the modem connection between the user and the ISP that limits the Internet operational efficiency. Therefore, an "inexpensive" ISP with "slow" external communication channels can eventually cost you a greater amount of money than a more "expensive" one with high-performance channels. Information on external communication channels and their capacity is often available on ISPs' Web sites, but it should be treated critically. For example, the claim that "the capacity of our external communication channels is 10 Mbps" may actually mean that a 10-Mb line connects that ISP with another ISP located in the same city that, in turn, is connected with the "external world" by a much "thinner" channel. Of equal importance is the real load on these channels. Try to ask other customers of a particular ISP about the real speed of data downloads from various foreign servers, the extent to which it depends on the time of the day, etc. In addition, you may also ask your foreign friends to visit

the Web site or FTP server of that ISP and share with you their impressions with respect to the communication speed.

E-Mail Services: Mailing Protocols, Access Modes, etc.

Issues to consider:

- Which mailing protocols are available to you and what charges are involved?
- What method of charging for e-mail services is used: fixed, per unit of time or per kilobyte?
- Possibility and mechanism for redirecting e-mail messages.
- Limitations on the time and volume of stored e-mail messages.
- What precautions are used to limit the opportunities open to users?

Comments:

Various mailing protocols can be used for sending and receiving e-mail messages between the user and ISP. The most widespread ones are currently **POP3** (Post Office Protocol v. 3) for reception and **SMTP** (Simple Mail Transfer Protocol) for sending. It is these protocols that the most popular mail clients such as Eudora, Netscape Mail, Microsoft Internet Mail, Outlook Express, Pegasus Mail, etc. are designed to use.

In the early years of the Internet in the former Soviet Union, **UUCP** (Unix-to-Unix Copy Protocol; you can also come across the abbreviation **UUPC** that means an implementation of UUCP for personal computers) was most frequently used for sending e-mail messages between the user and ISP. That protocol was only supported by special mail clients the choice and features of which were severely limited. Still many ISPs in the former Soviet Union offer their customers e-mail services with UUPC along with POP/SMTP (some of them provide UUPC-based e-mail services **only**). When choosing an e-mail service mode, you should have in mind that:

- The UUPC mode does not require on-line Internet access and is often the most inexpensive mode of using e-mail.
- The UUPC mode is less demanding with respect to the telephone line quality since downloads can be "resumed" after the broken connection is re-established.
- In the UUPC mode, it is possible to create additional mailboxes.
- In the UUPC mode, one cannot use popular e-mail clients designed to send mail messages with the use of POP/SMTP -- at least without installing special software such as a POP/SMTP-UUPC gate called Mailserver (a commercial product; older versions are available as freeware). UUPC mail clients for Windows are also distributed as commercial products (such as Demos Mail for Windows or Mini-Host for Windows), while free UUPC mail programs for DOS (such as DMail/UUPC or Mail/UUPC) are even more primitive in terms of their user interface and features. When running these products, the user has to "manually" perform a lot of operations that are automated in more up-to-date products. Furthermore, since these products are designed to run under DOS, errors can occur during the processing of large files due to the lack of the RAM accessible to the client.
- Access to a mailbox with the use of POP3 is also possible if the computer in question is connected to the Internet via another ISP. That is very convenient when you need to read your mail by using another computer, especially when in another city. (Some ISPs block access to POP mailbox from ? "alien" IP addresses for security reasons.) If, however, the mailbox was opened with the use of UUPC, it is not possible.

There are also other mailing protocols such as **IMAP4** (Internet Mail Access Protocol v. 4) that allows storing e-mail messages and performing key operations with them on the ISP's server rather than on the user's computer. That is especially convenient for those users who want to access their mail from different computers. Not all ISPs and mail clients, however, currently support the IMAP4 protocol.

You should definitely clear up how much your potential ISP **charges** for using its e-mail services. Generally, these charges may include a fixed fee for maintaining your address and mailbox, hourly charge for on-line time, as well as per-kilobyte charge for ingoing and outgoing e-mail messages (which may be differentiated by country/region). Per-kilobyte charges for ingoing e-mail messages are especially discouraging as the user has to pay for those messages he/she would rather prefer not to receive. (In addition, it would be useful to clear up with your ISP how e-mail messages are classified by region to avoid confusion. For example, your potential ISP may automatically relate all addresses ending up with *.net*, *.com* or *.org* to the "far abroad" even if they are actually maintained by a server located in the same city. On the other hand, the route between two ISPs located in the same country or even city may well pass through another country.)

Find out if it is possible to create **additional POP mailboxes** and addresses with your ISP and how much it will cost you.

If your ISP does not provide a mailbox that is accessible with the POP3/SMTP protocols (or you want to save some money on e-mail charges or charges for the creation of an additional POP address), then you can apply to a company who offers free mailboxes -- usually in advertising purposes -- provided that you have on-line access to the Internet. (Some free e-mail servers are listed at <http://www.emailaddresses.com/>.) You should have in mind, however, that such a company will not be responsible for the quality of its free services and may discontinue to provide these services at any time. Therefore, free e-mail addresses are generally less reliable than commercial ones offered by ISPs. When creating a free e-mail address, you should pay attention to the **limitation on the volume of e-mail messages** to be stored on the server. Any excess over the established limits may result in lost e-mail messages. However, all ISPs put certain limitations (though not always clearly stated) on the size and/or duration of e-mail messages stored on their servers -- and you should clear this up, too, especially before going on vacation or leaving for a long trip.

Some ISPs (such as **GlasNet**) also offer their customers an opportunity to use the **text-terminal mode** of operating with e-mail, in which the user can run a program for reading and processing e-mail messages after getting connected to the ISP's server via the Telnet or a telephone line. While such programs usually have a rather primitive interface (a natural feature for the purely text mode), you can access your e-mail from another computer without the need to install or re-configure any software on that computer.

Another question that would be reasonable to ask is whether it is possible -- and if yes, what is the practical mechanism used -- to automatically **redirect** ingoing e-mail messages to another address. Some ISPs allow the user to enable the redirection mode themselves at any time (for example, in the terminal dialog mode via a special menu item or by editing⁽⁴⁾ the file *.forward* in his/her working directory on the ISP's server), while others require a special application to the webmaster.

Many ISPs in the former Soviet Union have special POP/SMTP servers that automatically recode Cyrillic characters in all ingoing and outgoing messages (for example, from KOI8-R into Windows-1251 and visa versa). You should clear up with your ISP the addresses of their POP/SMTP servers that can -- or cannot -- recode Cyrillic characters in order to correctly

configure your e-mail client. (It is reasonable to use recoding servers only if your e-mail client itself does not support recoding, otherwise double recoding may occur.)

Various ISPs address the **system security** problem -- i.e. protect the system against unauthorized use -- in different ways. Some ISPs (such as [Global Ukraine](#)) block access to the system and e-mail messages for those users who reach the Internet via another ISP and have an "alien" IP address, even if they correctly enter their login name and password. While such limitations certainly improve system security, they are very inconvenient for those users who want to check their mailbox when in another city or country. Furthermore, in order to protect their customers against unsolicited advertisements (*spam*), some ISPs equip their servers with special filters that only pass messages that meet certain criteria and do not pass messages coming from domains included in international "black lists" or from servers with "wrong" parameters (for more details on such criteria, visit, for example, <http://noc.gu.net/antispam.html> or <http://www.sendmail.org/antispam.html>). Unfortunately, such security precautions in practice may result in some "useful" messages failing to reach the users. Therefore, you should find out whether your potential ISP uses such protective systems.

Access to USENET Newsgroups

Issues to consider:

- Does your potential ISP have a NNTP server?
- Whether extra charges are collected for the use of that server?

Comments:

The network of USENET newsgroups is a communication tool and a source of information that is underestimated by many Internet users. The so-called NNTP servers are used to provide on-line access to USENET newsgroups (those UUPC users who do not have on-line access to the Internet can use special mail/news servers). Clear up with your potential ISP if they have a NNTP server and collect an extra charge for the use of it (apart from the on-line time). You should have in mind that newsgroups are subdivided into non-commercial and commercial ones -- the latter ones usually contain the word *commerce* in their names and require extra charge for posting messages.

If your potential ISP does not have its own NNTP server, you may wish to try to connect to free NNTP servers (while their lists are available in the Internet, the information contained there quickly becomes obsolete; you can visit www.jammed.com/~newzbot/ to search for a free server that supports a particular newsgroup) or access USENET via the [Deja.Com](#) search engine.

Your Own Web Page

An issue to consider:

- Space available on the ISP's server for users' Web pages: size and hosting charges.

Comments:

If you want to create your Web page in the Internet, clear up with your ISP if they provide hosting space on their server, what are the limitations on the size and whether that service is included in the main charges or should be paid for separately. You should have in mind that

some companies (such as <http://www.geocities.com/>, <http://www.chat.ru/> or <http://www.halyava.ru/>) provide space for customer Web pages on a free-of-charge basis.

Internet Accessibility in Other Cities. Roaming

Some ISPs such as GlasNet (<http://www.glasnet.ru/>), Russia On-Line (<http://www.online.ru/>) and Sovam Teleport Ukraine (<http://www.svitonline.com/>) have created "access points" in various cities and towns. Furthermore, they may have a global roaming agreement with ISPs in other countries so that you can access the Internet when in another city or country by dialing up a local telephone number. You should have in mind, however, that such roaming services may be provided for an extra charge -- even though that option would be anyway less expensive than dialing up your "native" access point via an intercity telephone line.

Internet Cards

Many ISPs have recently issued the so-called "Internet cards" that allow accessing the Internet without executing contracts and other legal stuff. This would save your time and is especially useful if you want to test the quality of the services offered by a particular ISP. By buying an Internet card issued by a local ISP, you can resolve the problem of accessing the Internet when in another locality. Some ISPs, however, may not provide the full range of services available to those users who have signed a contract to their "Internet-card" customers. Therefore, if you are going to access the Internet by using a card, you should find out whether you will have:

- your personal mailbox;
- access to the ISP's SMT0 server⁽²⁾;
- access to the ISP's NNTP server; and
- space to host your personal Web page.

In addition, you should clear up the questions discussed in the **Internet Access Modes** section: if the card allows entering the Internet via a proxy server **only**, you may encounter problems accessing a POP3/IMAP4 mailbox provided by another ISP, etc.

Extra Services

Issues to consider:

- Access to certain resources such as electronic versions of newspapers, magazines, etc.; and
- Fax gates, Internet telephony, etc.

Comments:

Some ISPs (such as **Russia-On-Line**) offer their customers free access to certain information resources such as electronic versions of newspapers, magazines, etc. that "alien" users can only access for a separate charge or to a limited extent.

Moreover, many ISPs offer extra commercial services such as fax gates (faxing of e-mail messages), Internet telephony, etc.

Such extra services may have a "negative sign," meaning that some ISPs who are organizationally part of state-owned telephone companies can disconnect you from the

telephone line, as well as from the Internet for a failure to pay your bill. When dealing with such ISPs, you should always take care to keep your balance of account on the positive side.

Other Factors

Issues to consider:

- Operational reliability of the ISP's communication lines and servers.
- Qualifications of the ISP's staff.
- The attitude of the ISP's staff toward the customers.

Comments:

These factors are equally important, but they are difficult to assess without practical experience of dealing with a particular ISP. (By trying to clear up the questions discussed in this document with the ISP's staff members, you may get an idea about their attitude toward the customers, at least about their politeness and patience :-)). You may also wish to ask the current or former customers of a particular ISP to share their impressions with you (you can try to do that via the USENET). You can also get some interesting information by searching for mentions of your ISP in USENET newsgroups at Deja.Com (in the full archive).

ISP Data Table

The issues discussed in the above sections are summarized in the table below:

ISP's name	
Web site URL	
Contact telephone numbers	
External communication channels (direction and capacity)	
<p>If connected via a dedicated channel:</p> <ul style="list-style-type: none"> • What is the channel capacity (available within your budget)? • What is the registration fee? • What are the monthly charges? • What is the extra charge for loading the channel? • Is a mailbox included (if not, how much does it cost)? • Are Web page hosting space and access to the news server included (if not, how much does it cost)? • What is the monthly charge your telephone company collects for leasing your dedicated line? • What are the costs to install your dedicated line? • What are the estimated cost to purchase modems and other additional equipment? • How much will you have to pay a technical specialist for installation and set-up services? • What are the costs to register your own domain name (if necessary)? • What is the total lump-sum cost estimate? • What is the total monthly cost estimate? 	
Modem telephone numbers:	

number of lines, type of exchanges	
<p>Internet access mode:</p> <ul style="list-style-type: none"> • Access protocol (PPP, SLIP, CSLIP, etc.) • IP address: fixed (static), dynamic or virtual? • If direct access to the Internet possible (other than via a proxy server)? • If access to the Internet is only possible via a proxy server: <ul style="list-style-type: none"> ○ Will you have access to "alien" POP3/IMAP4 servers? ○ Will you have access to ICQ, IRC and Real Audio? 	
<p>Charges for dial-up connection (according to the chosen tariff plan; don't forget to add taxes if not included in the price list):</p> <ul style="list-style-type: none"> • What is the registration fee? • What is the monthly charge collected by your ISP? • What is the charge per unit of time? • Is a mailbox included (if not, how much does it cost)? • Are Web page hosting space and access to the news server included (if not, how much does it cost)? • What is the extra charge for a fixed or real IP address (if necessary)? • How much will you have to pay a technical specialist for installation and set-up services? • What is the total lump-sum cost estimate? • What is the total monthly cost estimate? • How many on-line hours per month can be bought with that amount of money? • If you choose an "unlimited access" tariff plan, find out whether there are any actual limitations on the number of on-line hours per month? <p>If your telephone company charges you for your telephone calls per unit of time, add the appropriate sum to the total monthly cost estimate (based on the expected number of on-line hours). If your ISP charges you for the volume of e-mail messages transmitted, you will bear extra expenses.</p>	
<p>E-mail services:</p> <ul style="list-style-type: none"> • What protocols are supported (POP3, IMAP4, UUCP)? • What is the maximum size of the mailbox offered (in MB)? • What is the charge for additional mailboxes (if necessary)? • Does your ISP charge for the volume of e-mails messages sent and received? • Possibility and mechanism for re-directing e-mail messages: can you control that process yourself or should you submit a special application to the ISP? 	

<p>If the maximum allowable size of your mailbox is insufficient (or you need several mailboxes), add the charge for the extra volume (or additional mailboxes) to the total cost estimate. (In fact, not all ISPs strictly monitor the observance of the maximum mailbox size requirement.)</p>	
<p>User Web pages on the ISP's server:</p> <ul style="list-style-type: none"> • What is the maximum size (in MB)? • What is the charge for extra volume (if necessary)? • What is the level of active content support (Java, cgi, etc. -- if necessary)? <p>If the maximum allowable size of your Web page is insufficient, add the charge for the extra volume to the total cost estimate.</p>	
<p>Security precautions that limit the user's opportunities:</p> <ul style="list-style-type: none"> • Is access to your mailbox (POP3/IMAP4) from "alien" IP addresses prohibited? • What spam blocking system does your ISP use (are e-mail messages sent by "incorrectly described" servers blocked for reception)? 	
<p>Possibility to access the Internet when in other localities and countries (regional/global roaming) and the charges involved</p>	
<p>Extra services</p>	
<p>If you access the Internet by using "Internet cards":</p> <ul style="list-style-type: none"> • Does your ISP provide a mailbox? • Will you have access to the ISP's SMTP server? • Will you have access to the ISP's NNTP server? • Does your ISP provide space for hosting your Web page? • If access to the Internet is only possible via a proxy server, will you have access to an "alien" POP3/IMAP4 server, ICQ, IRC and Real Audio? 	
<p>Testing results and opinion of current or former customers of the ISP:</p> <ul style="list-style-type: none"> • Is it easy to dial up the modem telephone numbers (in particular, from your exchange)? • How high are the quality and stability of telephone connection (in particular, from your exchange)? • How reliable is the operation of the communication lines and servers? • How high is the speed of downloads from remote servers (note that often-visited Web pages may be contained in the proxy server's cache and be downloaded from there much quicker than from the original server)? • How high are the qualifications of the ISP's staff? • What kind of attitude do the ISP's staff have toward the users? 	

NOTES

⁽¹⁾ For example, the command `echo user@host.com >.forward` will write the string `user@host.com` in the file named `.forward`, and after that all ingoing e-mail messages will be automatically re-directed from the given mailbox to the address `user@host.com`.

⁽²⁾ Many ISPs permit access to their SMTP server from their "native" IP addresses only to prevent "alien" users from using it for sending spam or for other improper purposes. "Internet cards" are usually anonymous, so a person who has been disconnected from the Internet for violating the Net ethics can easily open a new account by buying a card. Therefore, not all ISPs will allow Internet-card customers to access their SMTP servers.