Appendix A: Selected international Internet access contacts

**AARNET**
The Australian Academic and Research Network
GPO Box 1142
Canberra ACT 2601
AUSTRALIA
Tel: +61 6 249 3385
Fax: n.a.
E-mail: G.Huston@aarnet.edu.au
Area Served: Australia

**ACONET**
Austrian Scientific Data Network
Gusshausstrasse 25
1040 Wien
AUSTRIA
Tel: +43 43611 1 or +43 222 58801 3605
Fax: n.a.
E-mail: helpdesk@aco.net
Area Served: Austria

**ACTRIX**
Actrix Information Exchange
P.O. Box 11-410
Wellington
NEW ZEALAND
Tel: +64 4 499-1708
Fax: +64 4 389-6356
E-mail: john@actrix.gen.nz
Area Served: New Zealand

**ALTERNEX**
IBASE
Rua Vicente de Souza 29
22251 Rio de Janiero
BRAZIL
Tel: 55 (21) 286 0348
Fax: 55 (21) 286 0541
E-mail: suporte@ax.apc.org
Area Served: Brazil

**AMT Solutions Group Inc.**
Island Net
P.O. Box 6201 Depot I
Victoria B.C. V8P 5L5
CANADA
Tel: +1 604 727-6030
Fax: +1 604 478-7343
E-mail: mark@amtsgi.bc.ca
Area Served: Victoria, British Columbia

**ANTENNA**
Antenna
Box 1513
6501 BM Nijmegen
The Netherlands
Tel: +31(80) 235 372
Fax: +31(80) 236 798
E-mail: support@antenna.nl
Area Served: The Netherlands

**ARIADNE**
Ariadne
NRC DEMOKRITOS
153 10 Attiki-Athens
Greece
Tel: +30 1 6513392 or +30 1 6536351
Fax: +30 16532910 or +30 1 6532175
E-mail: postmaster@isosun.ariadne-t.gr or postmast@grathdem(Bitnet)
Area Served: Greece

**ARNET**
(Alberta Research Network)
Alberta Research Council
Box 8330, Station F
Edmonton, Alberta T6H 5X2
CANADA
Tel: +1 403 450 5188
Fax: +1 403 461 2651
E-mail: arnet@arc.ab.ca or penno@arc.ab.ca
Area Served: Alberta, Canada

**ARNES**
ARNES Network
Attn: Marko Bonac
Jamova 39, Ljubljana
SLOVENIA
Tel: +38 61 159199
Fax: +38 61 161 029
E-mail: helpdesk@ijs.si
Area Served: Slovenia

**ARNET**
Argentine Science Network
Reconquista 1088 ler. Piso Informatica (1003) Capital Federal
Buenos Aires, Argentina
Tel: +54 313 8082
Fax: +54 184 4824
E-mail: pete@atina.ar or os@atina.ar
Area Served: Argentina

**BALTBONE**
Ants Work
Akadeemie tee 21
EE 0108 TALLINN
ESTONIA
Tel: +007 0142 525622
Fax:+0070142527901
E-mail: ants@ioc.ee
Area Served: Baltic countries: Estonia, Lithuania, Latvia.

**BCnet**
BCnet Headquarters
515 West Hastings Street
Internet 2000 — The path to the total network

Vancouver, British Columbia  
Canada  V6B 5K3  
Tel: +1 604 291 5209  
Fax: +1 604 291 5022  
E-mail: Mike@bc.net  
Area Served: British Columbia, Canada

BELNET  
Belgian Research Network  
Wetenshapsstraat 8  
1040 Brussels  
Belgium  
Tel: +32 2 238 3470  
Fax: n.a.  
E-mail: helpdesk@belnet.be  
Area Served: Belgium

BGnet  
BG Network  
Neofit Bozveli 6  
Varna 9000  
BULGARIA  
Tel: +359 52 234540  
Fax: +359 52 234540  
E-mail: postmaster@Bulgaria.EU.net  
Area Served: Bulgaria

CA’net  
CA’net Information Centre  
4 Bancroft Ave., Rm 116  
Toronto, Ontario  
CANADA, M5S 1 A 1  
Tel: +1 416 978 5058  
Fax: +1 416 978 6620  
E-mail: info@CAnet.ca or eugene@vm.utcs.utoronto.ca  
Area Served: Canada

CARNet  
Croatian Academic and Research Network  
J. Marohnica bb  
41000 Zagreb  
Croatia  
Tel: +38 41 510 033  
Fax: n.a.  
E-mail: helpdesk@carnet.hr  
Area Served: Croatia CCAN (Computer Communication Access for NGOs)

CERN  
CN Division  
12 11 Geneva 23  
Switzerland  
Tel: +41 22 767 3356  
Fax: +41 22 767 7155  
E-mail: postmaster@cern.ch  
Area Served: International

CHASQUE  
Chasque network  
Casilla Correo 1539  
Montevideo 11000  
Uruguay  
Tel: +598 (2) 496 192  
Fax: +598 (2) 419 222  
E-mail: apoyo@chasque.apc.org  
Area Served: Uruguay & Paraguay

CAM  
Communications Accessibles Montreal (CAM.ORG)  
Address: n.a.  
Canada  
Tel: +1 514 923 2102  
Fax: n.a.  
E-mail: info@CAM.ORG  
Area Served: Canada, QC: Montreal, Laval, South-Shore, West-Island

CONNECT  
The IBM PC User Group  
PO Box 360  
Harrow HA1 4LQ  
ENGLAND  
Tel: +44 0 81 863 1191  
Fax: +44 0 81 863 6095  
E-mail: info@ibmpcug.co.uk  
Area served: London area.

COLNODO  
Colnodoa Network  
Carrera 23 No. 39-82  
Santafe de Bogota  
Columbia  
Tel: 57-2697181, 2444692, 2697202  
Fax: n.a.  
E-mail: julian@colnodo.igc.apc.org  
Area Served: Columbia

COMLINK  
ComLink  
Emil-Meyer-Str. 20  
30165 Hannover  
Germany  
Tel: +49 (511) 350-1573  
Fax: +49 (511) 350-1574  
E-mail: support@oln.comlink.apc.org  
Area Served: Germany, Austria, Switzerland, Zagreb, Belgrade

CONNECT  
Connect.com.au pty ltd  
29 Fitzgerald Crescent  
Caulfield Victoria 3161  
AUSTRALIA  
Tel: +61 3 528 2239  
Fax: +61 3 528 5887  
E-mail: connect@connect.com.au  
Area Served: Australia: Melbourne, Sydney

DataNet  
Telecom Finland  
P.O. Box 228  
Rautatienkatu 10  
33101 TAMPERE  
Finland  
Tel: +358 3 1 243 2242
DENet
The Danish Network for Research and Education UNI-C
The Danish Computing Centre for Research and Education
Building 305, DTH
2800 Lyngby
Denmark
Tel: +45 45 93 83 55
Fax: +45 45 93 02 20
E-mail: Jan.P.Sorensen@uni-c.dk
Area Served: Denmark

DFN
DFN-Verein e. V.
Pariser Strasse 44
1000 Berlin 15
GERMANY
Tel: t49 30 88 42 99 22
Fax: t49 30 88 42 99 70
E-mail: dfn-verein@dfn.dbp.de or wilhelm@dfn.dbp.de
Area Served: Germany

EARN
European Academic Research Network
BP 167
9 1403 Orsay CEDEX
FRANCE
Tel: t33 1 69 82 39 73
Fax: t33 1 69 28 52 73
E-mail: grange%frors12.bitnet@mitvma.mit.edu
Area Served: Europe and International

EARN-France
European Academic Research Network - FRANCE
950 rue de Saint Priest
34184 Montpellier Cedex 4
FRANCE
Tel: t33 67 14 14 14
Fax: t33 67 52 57 63
E-mail: ^BRUCH%FRMOP11.BITNET@pucc.Princeton.EDU
Area Served: France

ECONNECT
Econnect
Sdruzeni Pro Snadne Spojeni
Naocvicinach 2 170 00 Prague 7,
Czech Republic
Tel: +42(02) 66710366
Fax: n.a.

EUNET
European Network
Kruislaan 409
1098 SJ Amsterdam
THE NETHERLANDS
Tel: t31 20 592 5109
Fax: t31 20 592 5155
E-mail: info@eu.net
Area Served: Europe and International (Algeria, Austria, Belgium, Bulgaria, Czech Republic, Denmark, Egypt, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Morocco, Netherlands, Norway, Portugal, Romania, Slovakia, Slovenia, Russia and other parts of former Soviet Union, Spain, Switzerland, Tunisia, United Kingdom)

EuropaNET DANTE
Delivery of Advanced Network Technology to Europe Ltd.
Lockton House Clarendon Road
Cambridge, CB2 2B
UK
Tel: +44 223 302 992
Fax: +44 223 303 005
E-mail: dante@dante.org.uk
Area Served: Europe (US, Canada, Rep. of Korea via provision of intercontinental lines)

**Fnet**
FNET Association
11 rue Camot
94270 Le Kremlin-Bicêtre
FRANCE
Tel: +33 1 45 21 02 04
Fax: +33 1 46 58 94 20
E-mail: contact@fnet.fr
Area Served: France

**FUNE**
Finnish University and Research Network
P.O. Box 40
02101 Espoo
FINLAND
Tel: +358 045 727 111
Fax: +358 0 457 2302
E-mail: sadenimi@funet.fi
Area Served: Finland

**GARR**
Gruppo Armonizzazione delle Reti per la Ricerca
c/o CNR - Istituto Cnuce Via S.Maria, 36
56126 Pisa
ITALY
Tel: +39 50 593 360
Fax: +39 50 589 354
E-mail: INFO@NIS.GARR.IT C=IT; ADMD=GARR; PRMD=NIS; S=INFO
Area Served: Italy

**GEONET**
GeoNet Mailbox Systems
Address: n.a.
Germany
Tel: +49 6673 1888 1
Fax: n.a.
E-mail: postmaster@geo5.geomail.org
Area Served: Germany

**GlasNet**
Ulitsa Sadovaya-Chemogaizskaya
dom 4, Komnata 16, Third Floor
107078 Moscow
RUSSIA
Tel: +7 (095) 207-0704
Fax: +7 (095) 207-0889
E-mail: support@glas.apc.org
Area Served: Russia and other Commonwealth of Independent State’s Countries.
Services: Dial-up Host, UUCP

**GLUK**
GlasNet-Ukraine, Ltd
14b Metrologicheskaya str.
Kiev, 252143
Ukraine
Tel: t7 (044) 266 9481
Fax: t7 (044) 266 9475
E-mail: support@gluk.apc.org
Area Served: Ukraine

**GREENNET**
Green Network
23 Bevenden Street
London N1 6BH
UNITED KINGDOM
Tel: +44 (71) 608 3040
Fax: +44 (71) 253 0801
E-mail: support@gn.apc.org
Area Served: International, Africa

**HEANET**
Higher Education Authority
Fitzwilliam Square
Dublin
IRELAND
Management Committee
Tel: t353 1 612748
Fax: t353 1 610492
E-mail: Mnorris@hea.ie
Area Served: Ireland

**HISTRIA**
HISTRIA
Ziherslova 43 61
Ljubljana
Slovenia
Tel: +38 61 211-553
Fax: +38 61 152-107
E-mail: support@histria.apc.org
Area Served: Slovenia

**HONGKONGSUPERNET**
Hong Kong Supernet
HKUST Campus
Clear Water Bay, Kowloon
HONG KONG
Tel: (+852)358-7924
Fax: (+852)358-7925
E-mail: info@hk.super.net
Area Served: Hong Kong and the ASEAN region

**HUNGARNET**
Computer and Automation Institute
1132 Budapest
18-22 Victor Hugo
HUNGARY
Tel: t36 1 149 7352
Fax: n.a.
E-mail: postmaster@ella.hu
Area Served: Hungary

**ILAN**
Israeli Academic Network Information Center
Computer Center
Tel Aviv University
ISRAEL
Tel: +972 3 6408309
Fax: n.a
E-mail: hank@vm.tau.ac.il
Area Served: Israel

INCA
Internetworking Cape
PO Box 6844
Roggebaai 80 12
SOUTH AFRICA
Tel: +27 21 4192690
Fax: n.a
E-mail: info@inca.za
Area Served: South Africa

INDIALINK BOMBAY
Praveen Rao, Indialink Coord. Bombay
c/o Maniben Kara Institute Nagindas Chambers,
167 P.D'Mello Rd
Bombay - 400 038
INDIA
Tel: 91-22-262-2388 or 261-2185
Fax: n.a
E-mail: mki@inbb.gn.apc.org
Area Served: India

INDIALINK DELHI
Indialink
1 Institutional area, Lodiroad,
New Delhi
INDIA
Tel: 91-11-463-5096 or 461.1745
Fax: 91-11-462-5015
E-mail: leo@unv.ernet.in
Area Served: India

INTERNEX
Intemex Online Inc.
Suite 1801 1 Yonge St
Toronto, ON
CANADA M5E IW7
TEL: +1416 363 8676
Fax: n.a
E-mail: vid@IO.ORG or scrappy@IO.ORG
Area Served: Toronto Canada

IRELAND ON-LINE
Ireland On-Line
West Wing, Udaras Complex
Furbo Galway
Ireland
Tel: +35391 92727
Fax: +35391 92726
E-mail: postmaster@iol.ie
Area Served: Ireland

ISnet
University of Iceland
Dunhaga 5
107 Reykjavik
ICELAND

ITALYNET
Italy Network
Via G.Taddei 3
Pisa
Italy
Tel: 39-5-57-6343
Fax: n.a
E-mail: cesare@gn.apc.org
Area Served: Italy

ITESM
Depto. de Telecomunicaciones y Redes
ITESM Campus Monterrey E. Garza Sada #2501
Monterrey, N.L., C.P. 64849
MEXICO
Tel: +52 83 582 000 ext. 4130
Fax: +52 83 588 931
E-mail: hugo@mtcvel.mty.itesm.mx
Area Served: Mexico

IUNET
InuNet
Via Opera Pia,11A
16145 Genova
ITALY
Tel: +39 10 353 2747
Fax:+391035329484
E-mail: ab@dist.unige.it
Area Served: Italy

JANET
Joint Academic Network
Rutherford Appleton Laboratory
Oxon OX1 1OQX
UNITED KINGDOM
Tel: +44 235 5517
E-mail: JANET-LIAISON-DESK@jnt.ac.uk
Area Served: United Kingdom

JARING
MIMOS
7th Flr, Exchange Square Off Jalan Semantan
50490 Kuala Lumpur
MALAYSIA
Tel: +60-3-254-9601
Fax: +60-3-253-1898
E-mail: noc@jaring.my
Area Served: Malaysia

JIPS
Joint Network Team
Chilton Didcot
Oxon OX1 1 OQX
UNITED KINGDOM
Tel: +44 235 44 5163
Fax: n.a
MUKLA
Makerere University
Kampala
Uganda
Tel: +256-41-532-479
Fax:
E-mail: sysop@mukla.gn.apc.org
Area Served: Uganda

NB*net
University of New Brunswick
Director, Computing Services
Fredericton, New Brunswick
CANADA, E3B 5A3
Tel: +1 506 453 4573
Fax: +1 506 453 3590
E-mail: DGM@unb.ca
Area Served: New Brunswick, Canada

Nicarao
Iglesia Carmen
Izquierda al lago Apartado 3516
Managua
Nicaragua
Tel: +505 (2) 621-312
Fax: +505 (2) 621-244
E-mail: support@ni.apc.org
Area Served: Central America, Panama.

NLnet
Newfoundland and Labrador Network
Memorial University of Newfoundland
St. John’s, Newfoundland
CANADA, A1C 5S7
Tel: +1 709 737 8329
Fax: +1 709 737 3514
E-mail: admin@nlnet.nl.ca
Area Served: Newfoundland and Labrador, Canada

NORDNET
Nordic Network
Huvudkvarterstegsvegen 13, nb
121 54 Johanneshov
SWEDEN
Tel: +46 8-600 0331
Fax: +46 8-600 0443
E-mail: support@pns.apc.org
Area Served: Sweden

NORDUNET
Nordunet
c/O SICS P.O. Box 1263
164 28 Kista
SWEDEN
Tel: +46 8 752 1563
Fax: +46 8 7517230
E-mail: NORDUNET@sics.se
Area Served: Norway, Denmark, Finland, Iceland, Sweden.

NSTN
Nova Scotia Technology Network
900 Windmill Road, Suite 107
Dartmouth, Nova Scotia  
CANADA, B3B 1P7  
Tel: +1 902 468 6786  
Fax: +1 902 468 3679  
E-mail: martinea@hawk.nstn.ns.ca  
Area Served: Nova Scotia, Canada

**ONet**  
ONet Computing Services University of Toronto  
4 Bancroft Avenue, Rm 116  
Toronto, Ontario,  
CANADA, M5S 1A1  
Tel: +1 416 978 5058  
Fax: +1 416 978 6620  
E-mail: eugene@vm.utcs.utoronto.ca  
Area Served: Ontario, Canada

**ORSTOM**  
Institut Français de Recherche Scientifique pour le Développement en Coopération Service Informatique  
213, rue La Fayette  
75480 PARIS Cedex  
FRANCE  
Tel: +33 48 03 76 09 or +33 67 6 17510  
Fax: n.a.  
E-mail: renaud@PARIS.ORSTOM.FR  
Area Served: France

**OSLONET**  
Oslonett Aksess  
Gaustadalleen 21  
0371 Oslo  
NORWAY  
Tel: +47 22 46 10 99  
Fax: +47 22 46 45 28  
E-mail: oslonett@oslonett.no  
Area Served: Norway

**OTC**  
OTC Electronic Trading  
4 1 Mc Laren Street  
North Sydney NSW 2060  
Australia  
Tel: +61 954 3055  
Fax: +61 957 1406  
E-mail: n.a.  
Area Served: Australia

**PACTOK**  
Pactok  
PO Box 284  
Broadway 4006  
Queensland, Australia  
Tel: +61(7)257-1111  
Fax: +61(7)257-1087  
E-mail: pactok@peg.apc.org  
Area Served: Pacific Islands

**PADIS**  
Pan African Development Information System  
Box 3001  
Addis Ababa  
Ethiopia  
Tel: +251(1)511167  
Fax: +251(1)514 416  
E-mail: sysop@padis.gn.apc.org  
Area Served: Ethiopia

**PEGASUS**  
Pegasus Networks  
PO Box 284  
Broadway 4006 Queensland  
AUSTRALIA  
Tel: +61 (7) 257-1111  
Fax: +61 (7) 257-1087  
E-mail: support@peg.apc.org  
Area Served: Australia, Pacific Islands, Southeast Asia

**PIPEX**  
Pipex  
Unipalm Ltd.  
Address: n.a.  
United Kingdom  
Tel: +44 223 424 61  
Fax: +44 223 426 86  
E-mail: pipex@unipalm.co.uk  
Area served: United Kingdom

**Piroska Giese**  
KFKI-Research Institute for Particle and Nuclear Physics  
1121 Budapest  
Konkoly Thege ut 29-33  
HUNGARY  
Tel: (36-I) 169-9499  
Fax: (36-I) 169-6567  
E-mail: Piroska.Giese@rmki.kfki.hu  
Area Served: Hungary, High Energy Physics Community

**Prince Edward Island Network**  
University of Prince Edward Island  
Computer Services  
550 University Avenue  
Charlottetown, P.E.I.  
CANADA, C1A 4P3  
Tel: +1 902 566 0450  
Fax: +1 902 566 0958  
E-mail: Hancock@upei.ca  
Area Served: Prince Edward Island, Canada

**RARE**  
RARE Secretariat  
Singel 466-468  
1017 AW Amsterdam  
THE NETHERLANDS  
Tel: +31 206 39 1131  
Fax: +31 20 639 3289  
E-mail: raresec@rare.nl  
Area Served: Europe

**RCCN Vasco Freitas**  
CCES Universidade do Minho  
Largo do Paco  
47 19 Braga Codex  
PORTUGAL
Internet 2000 —
The path to the total network

RED400
CICB
 Campus de Beaulieu
 35042 Rennes
 FRANCE
 Tel: +33 1 39 63 54 58
 E-mail: contact-red@cicb.fr
 Area Served: France

SANGONET
Sangonet
 13th floor Longsbank Building 187 Bree Street
 Johannesberg 2000
 South Africa
 Tel: 111 838-6944
 Fax: +27 (11) 838-6310
 E-mail: support@wn.apc.org
 Area Served: South Africa

SUNET
Sunet
 UMDAC
 901 87 Umea
 SWEDEN
 Tel: 46 90 16 56 45
 Fax: +46 90 16 67 62
 E-mail: postmaster@sunet.se
 Area Served: Sweden

SURFnet
Surfnet
 P.O. Box 19035
 3501 DA Utrecht
 THE NETHERLANDS
 Tel: 31 3 0310290
 Fax: n.a.
 E-mail: info@surfnet.nl
 Area served: The Netherlands

SWITCH
SWITCH Head Office
 Limmatquai 138
 8001 Zurich
 SWITZERLAND
 Tel: 41 1 256 5454
 Fax: +41 1 261 8133
 E-mail: postmaster@switch.ch
 Area Served: Switzerland

TANet
Computer Center, Ministry of Education
 12th Fl, No. 106
 Sec. 2, Hoping E. Road
 Taipei, Taiwan
 Tel: +886 2 7377010
 Fax: t886 2 7377043
 E-mail: nisc@twmoe10.cdu.tw
 Area Served: Taiwan
SLOVENIA
Tel: +386 1 159 199
Fax: +386 1 161 029
E-mail: jerman-blazic@ijs.ac.mail.yu
Area Served: Slovenia, Croatia, Bosnia-Herzegovina

ZANGO
Zambia Association for Research and Development
Address: n.a.
Lusaka
Zambia
Tel: +260 1 252 507
Fax: n.a.
E-mail: sysop@unza.gn.apc.org
Area Served: Zambia

Fax: +1 (416) 974 9189
E-mail: support@web.apc.org
Area Served: International.

WIDE
KEIO University
5322 Endo
Fujisawa, 252
JAPAN
Tel: +81 466 47 5111 ext. 3330
Fax: n.a.
E-mail: jun@wide.ad.jp
Area Served: Japan

YUNAC
Borka Jerman-Blazic, Secretary General
Jamova 39
61000 Ljubljana

Fax: +38 61 159 199
Fax: +38 61 161 029
E-mail: jerman-blazic@ijs.ac.mail.yu
Area Served: Slovenia, Croatia, Bosnia-Herzegovina
### Appendix B: Network speed overview

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Term</th>
<th>Kilobits</th>
<th>Megabits</th>
<th>Gigabits</th>
<th>Relative Speed</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>2400 baud</td>
<td>modem</td>
<td>1.92</td>
<td>.002</td>
<td>.000002</td>
<td>1.0</td>
<td>To send one second of NTSC video raster image at this speed takes about 25 minutes. Lower speed synchronous modem generally used as local access to X.25 / electronic mail and dial-up PC interconnectivity.</td>
</tr>
<tr>
<td>9600 baud</td>
<td>modem</td>
<td>7.68</td>
<td>.008</td>
<td>.000008</td>
<td>4.0</td>
<td></td>
</tr>
<tr>
<td>14,400 baud v.42</td>
<td>modem</td>
<td>11.52</td>
<td>.012</td>
<td>.000012</td>
<td>6.0</td>
<td>For high-speed interconnect for analogue trunk lines where 56/64 Kbs digital service is not available or cost effective.</td>
</tr>
<tr>
<td>19,200 baud v.42</td>
<td>modem</td>
<td>15.36</td>
<td>.015</td>
<td>.000015</td>
<td>8.0</td>
<td>This is currently the highest speed available over dial-up lines.</td>
</tr>
<tr>
<td>56 Kbs or 64 Kbs</td>
<td>X.25</td>
<td>56</td>
<td>.056</td>
<td>.00056</td>
<td>29.2</td>
<td>US / European primary level of digital service.</td>
</tr>
<tr>
<td>Ethernet</td>
<td>Network</td>
<td>10,000</td>
<td>10</td>
<td>0.01</td>
<td>5,200</td>
<td>Common network.</td>
</tr>
<tr>
<td>Fast Ethernet</td>
<td>Network</td>
<td>100,000</td>
<td>100</td>
<td>1</td>
<td>52,000</td>
<td>Provides significant speed increase without significant new investment in hardware.</td>
</tr>
<tr>
<td>Frame Relay</td>
<td>Frame Relay</td>
<td>56</td>
<td>.056</td>
<td>.00056</td>
<td>29.2</td>
<td>Provides fractional T-1 rates up to 1.544 Mbs in the US.</td>
</tr>
<tr>
<td>FDDI</td>
<td>Fiber Distributed Data Interface</td>
<td>100,000</td>
<td>100</td>
<td>1</td>
<td>52,000</td>
<td>Emerging as the new enterprise standard.</td>
</tr>
<tr>
<td>T-1 or DS1 / E1</td>
<td>Internet backbone</td>
<td>~ 1,540</td>
<td>~ 1.54</td>
<td>~ .00154</td>
<td>~ 802</td>
<td>Primary level of US PABX, incorporating digital signalling for 24 x 56 Kbs channels. Can also be used as a 1.54 Mbs data service. European E1 gives 2.048 Mbs.</td>
</tr>
<tr>
<td>T-3 or DS3</td>
<td>Next generation internet backbone</td>
<td>~ 45,000</td>
<td>~ 45</td>
<td>~ .045</td>
<td>234,000</td>
<td>45 Mbs is third stage of US transmission standards.</td>
</tr>
<tr>
<td>E3</td>
<td>Leased line</td>
<td>34,000</td>
<td>34</td>
<td>.034</td>
<td></td>
<td>34 Mbs is third stage of European transmission standards.</td>
</tr>
<tr>
<td>ISDN 2</td>
<td>Integrated Services Digital Network</td>
<td>2 x 64</td>
<td>2 x .064</td>
<td>2 x .0064</td>
<td>2,600 to 23,000</td>
<td>Becoming available in the US. More common in the France and other European countries. 2 x 64 Kb/s data channels and 1 x 16 Kb/s signalling channel used for dial-up ISDN service over the public switched telephone network.</td>
</tr>
<tr>
<td>Primary ISDN</td>
<td>Integrated Services Digital Network</td>
<td>24 x 56 / 30 x 64</td>
<td>24 x .056 / 30 x .064</td>
<td>24 x .0056 / 30 x .0064</td>
<td></td>
<td>US has 24 Kb/s data channels with 1 x 16 Kb/s signalling channel. Europe has 30 x 64 Kb/s channels, plus 1 signalling channel.</td>
</tr>
<tr>
<td>ATM (low)</td>
<td>Asynchronous Transfer Mode (low)</td>
<td>~ 145,000</td>
<td>~ 145</td>
<td>~ .145</td>
<td>75,500</td>
<td>Before ATM, speeds in excess of 100 Mbs required point to point links; a cell relay technology which can be used in ISDN environment. Speeds are flexible, generally starting from 45 Mbs.</td>
</tr>
<tr>
<td>ATM (high)</td>
<td>Asynchronous Transfer Mode</td>
<td>~ 2,400,000</td>
<td>~ 2,400</td>
<td>~ 2.4</td>
<td>1,249,525</td>
<td>Supports real-time videoconferencing.</td>
</tr>
<tr>
<td>B-ISDN</td>
<td>Broadband Integrated Services Digital Network</td>
<td>~ 10,000,000</td>
<td>~ 10,000</td>
<td>~ 10.0</td>
<td>5,200,000</td>
<td>Less common in the US.</td>
</tr>
<tr>
<td>SONET - OC-1</td>
<td>Synchronous Optical Network OC- 1</td>
<td>51,640</td>
<td>51.64</td>
<td>.052</td>
<td>26,900</td>
<td>Speeds are rated by optical character level of throughput; OC12 = 622 mb/s and could be used for 12 multiplexed OC1 circuits.</td>
</tr>
<tr>
<td>SONET-OC-12</td>
<td>Synchronous Optical Network OC- 12</td>
<td>622,000</td>
<td>622</td>
<td>.622</td>
<td>324,000</td>
<td></td>
</tr>
<tr>
<td>SONET (Max OC level)</td>
<td>Synchronous Optical Network (maximum level)</td>
<td>10,000,000</td>
<td>10,000</td>
<td>10</td>
<td>5,200,000</td>
<td>High speed used in demonstration applications.</td>
</tr>
</tbody>
</table>
Appendix C: Selected US government information sites

<table>
<thead>
<tr>
<th>Department</th>
<th>Category</th>
<th>Addresses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department of Agriculture</td>
<td>General</td>
<td>gopher cyfer.esusda.gov</td>
</tr>
<tr>
<td>Budget of the US Government</td>
<td>FY 1995</td>
<td>telnet ebb.stat-usa; password: test</td>
</tr>
<tr>
<td>Department of Commerce</td>
<td>Census</td>
<td>gopher bigcat.missouri.edu</td>
</tr>
<tr>
<td></td>
<td>Previous Years and other Info.</td>
<td>gopher sunsite.unc.edu</td>
</tr>
<tr>
<td></td>
<td>Commerce Business Daily</td>
<td>gopher cscns.com</td>
</tr>
<tr>
<td></td>
<td>Economics</td>
<td>gopher gopher.lib.umich.edu</td>
</tr>
<tr>
<td></td>
<td>Patent Office Reform Panel Final Report</td>
<td>telnet ebb.stat-usa; password: test</td>
</tr>
<tr>
<td></td>
<td></td>
<td>gopher wiretop.spies.com</td>
</tr>
<tr>
<td>Congress</td>
<td>Committee Assignments</td>
<td>gopher gopher.lib.umich.edu</td>
</tr>
<tr>
<td></td>
<td>Directories</td>
<td>gopher marvel.loc.gov</td>
</tr>
<tr>
<td></td>
<td>Firsts</td>
<td>gopher into.umd.edu</td>
</tr>
<tr>
<td></td>
<td>Information</td>
<td>gopher gopher.lib.umich.edu</td>
</tr>
<tr>
<td></td>
<td></td>
<td>gopher infolumd.edu</td>
</tr>
<tr>
<td></td>
<td>Legislation from 1973 to present</td>
<td>telnet locis.loc.gov</td>
</tr>
<tr>
<td></td>
<td>Senate Bibliographies (99th - current)</td>
<td>gopher dewey.lib.ncsu.edu</td>
</tr>
<tr>
<td>Copyright</td>
<td>General</td>
<td>telnet locis.loc.gov</td>
</tr>
<tr>
<td>Environmental Protection Agency</td>
<td>Chemical fact sheet</td>
<td>gopher ecosys.drdr.virginia.edu</td>
</tr>
<tr>
<td></td>
<td>On line Library System</td>
<td>telnet opaimb.rtpnc.cpa.gov</td>
</tr>
<tr>
<td>Fair Credit Shopping</td>
<td>General</td>
<td>gopher wiretap.spies.com</td>
</tr>
<tr>
<td>Federal Information Exchange</td>
<td>Federal research programs, grants, procurement opportunities</td>
<td>gopher fedix.fie.com</td>
</tr>
<tr>
<td>Federal Register</td>
<td>General</td>
<td>gopher gopher.netsys.com</td>
</tr>
<tr>
<td>Federal Regulations</td>
<td>General</td>
<td>gopher gopher.netsys.com</td>
</tr>
<tr>
<td>Food and Drug Administration</td>
<td>Information</td>
<td>telnet fdabbs.fda.gov; login:bbs</td>
</tr>
<tr>
<td>Freedom of Information Act</td>
<td>Food labelling</td>
<td>gopher zeus.esusda.gov</td>
</tr>
<tr>
<td>General Accounting Office</td>
<td>Reports</td>
<td>gopher wiretap.spies.com</td>
</tr>
<tr>
<td>Geological Survey</td>
<td>Information</td>
<td>ftp ftp.eu.nih.gov; password: guest</td>
</tr>
<tr>
<td>Survey Weekly Seismicity Report</td>
<td>gopher somalia.earth.nwu.edu</td>
<td></td>
</tr>
<tr>
<td>Earth Science Data Directory</td>
<td>gopher sciitbx.usc.edu</td>
<td></td>
</tr>
<tr>
<td>Earthquake Information</td>
<td>gopher gopher.stolaf.edu</td>
<td></td>
</tr>
<tr>
<td>US Government Gopher Servers</td>
<td>General</td>
<td>gopher stis.nsf.gov</td>
</tr>
<tr>
<td>Library of Congress</td>
<td>Information System</td>
<td>telnet locis.loc.gov</td>
</tr>
<tr>
<td></td>
<td>Marvel (congressional, Census, White House, crime data, etc.)</td>
<td>gopher marvin.loc.gov</td>
</tr>
<tr>
<td>NASA</td>
<td>National Space Science Data Center</td>
<td>telnet nssdca.gsfc.nasa.gov; username: nodls</td>
</tr>
<tr>
<td></td>
<td>Spacelink (news releases, shuttle and mission reports)</td>
<td>telnet spacelink.msfc.nasa.gov; password: newuser</td>
</tr>
<tr>
<td>National Archives</td>
<td>General</td>
<td>gopher marvel.loc.gov</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>National Institute of Standards &amp; Technology</td>
<td>General</td>
<td>gopher gopher-server.nist.gov</td>
</tr>
<tr>
<td>National Institutes of Health</td>
<td>Information</td>
<td>gopher gopher.nih.gov</td>
</tr>
<tr>
<td>AIDS Information</td>
<td>gopher odie.niaid.nih.gov</td>
<td></td>
</tr>
<tr>
<td>National Cancer Institute</td>
<td>gopher helix.nig.gov</td>
<td></td>
</tr>
<tr>
<td>National Library of Medicine (Genetic Sequence Data)</td>
<td>gopher odie.niaid.nih.gov</td>
<td></td>
</tr>
<tr>
<td>Center for Disease Control's Morbidity and Mortality Weekly Report</td>
<td>gopher odie.niaid.nih.gov</td>
<td></td>
</tr>
<tr>
<td>National Institute of Allergy and Infectious Disease</td>
<td>gopher odie.niaid.nih.gov</td>
<td></td>
</tr>
<tr>
<td>National Library of Medicine</td>
<td>gopher el-gopher.med.utah.edu</td>
<td></td>
</tr>
<tr>
<td>National Oceanic &amp; Atmospheric Administration</td>
<td>Earth System Data Directory</td>
<td>telnet esdim1.nodc.noaa.gov; login: noaadir</td>
</tr>
<tr>
<td>National Environmental Data Referral Service</td>
<td>gopher scilibx.ucsc.edu</td>
<td></td>
</tr>
<tr>
<td>National Weather Service Forecasts</td>
<td>gopher ashpool.micro.umn.edu</td>
<td></td>
</tr>
<tr>
<td>National Science Foundation</td>
<td>General</td>
<td>gopher stis.nsf.gov</td>
</tr>
<tr>
<td>Navy</td>
<td>Navy News Service</td>
<td>gopher marvel.loc.gov</td>
</tr>
<tr>
<td>Navy Policy Book</td>
<td>gopher marvel.loc.gov</td>
<td></td>
</tr>
<tr>
<td>Office of Personnel Management</td>
<td>Federal Jobs</td>
<td>gopher dartcms1.dartmouth.edu</td>
</tr>
<tr>
<td>Politics</td>
<td>1992 Campaign Election Results</td>
<td>gopher tamuts.tamu.edu</td>
</tr>
<tr>
<td>Political Platforms</td>
<td>gopher wire.spies.com</td>
<td></td>
</tr>
<tr>
<td>United Nations</td>
<td>Speeches from the 1992 Presidential Campaign</td>
<td>gopher bigcat.missouri.edu</td>
</tr>
<tr>
<td>Report on Crime and Criminal Justice in 123 countries</td>
<td>gopher uacse2.albany.edu</td>
<td></td>
</tr>
<tr>
<td>Information</td>
<td>gopher nywork1.undp.org</td>
<td></td>
</tr>
<tr>
<td>Conference on Environment &amp; Development Documents</td>
<td>gopher info.umd.edu</td>
<td></td>
</tr>
<tr>
<td>Resolutions</td>
<td>gopher wiretap.spies.com</td>
<td></td>
</tr>
<tr>
<td>Department of State</td>
<td>Travel Advisories</td>
<td>gopher gopher.stolaf.edu</td>
</tr>
<tr>
<td>Supreme Court</td>
<td>Decisions</td>
<td>gopher info.umd.edu</td>
</tr>
<tr>
<td>White House</td>
<td>Information</td>
<td>gopher tamuts.tamu.edu</td>
</tr>
<tr>
<td>Documents</td>
<td>gopher sunsite.unc.edu</td>
<td></td>
</tr>
<tr>
<td></td>
<td>gopher gopher.lib.umich.edu</td>
<td></td>
</tr>
<tr>
<td></td>
<td>gopher gopher.netsys.com</td>
<td></td>
</tr>
<tr>
<td></td>
<td>gopher wiretap.spies.com</td>
<td></td>
</tr>
<tr>
<td>Economic Plan</td>
<td>gopher wiretap.spies.com</td>
<td></td>
</tr>
<tr>
<td>Health Security Act of 1993</td>
<td>gopher ace.esusda.gov</td>
<td></td>
</tr>
<tr>
<td>National Information Infrastructure</td>
<td>gopher ace.esusda.gov</td>
<td></td>
</tr>
<tr>
<td>National Performance Review</td>
<td>gopher sunsite.unc.edu</td>
<td></td>
</tr>
<tr>
<td>North American Free Trade Agreement</td>
<td>gopher wiretap.spies.com</td>
<td></td>
</tr>
<tr>
<td>North Atlantic Treaty Organization Document</td>
<td>gopher sunsite.unc.edu</td>
<td></td>
</tr>
<tr>
<td>Treaties an International Covenants</td>
<td>gopher wiretap.spies.com</td>
<td></td>
</tr>
<tr>
<td>World Health Organization</td>
<td>General</td>
<td>gopher gopher.who.ch</td>
</tr>
<tr>
<td>Zip Code Database</td>
<td>General</td>
<td>gopher gopher.uoregon.edu</td>
</tr>
</tbody>
</table>
Appendix D: US national network infrastructure contacts

<table>
<thead>
<tr>
<th>Member</th>
<th>Title</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morton Bahr</td>
<td>President</td>
<td>Communications Workers of America (AFL-CIO)</td>
</tr>
<tr>
<td>Tony Carbo Bearman</td>
<td>Dean</td>
<td>School of Library and Information Science, University of Pittsburgh</td>
</tr>
<tr>
<td>Bonnie L. Bracey</td>
<td>Teacher</td>
<td>Ashlawn Elementary School, Arlington, Virginia</td>
</tr>
<tr>
<td>John F. Cooke</td>
<td>President</td>
<td>The Disney Channel</td>
</tr>
<tr>
<td>Esther Dyson</td>
<td>President</td>
<td>EDventure Holdings, Inc.</td>
</tr>
<tr>
<td>Craig I. Fields</td>
<td>Chairman</td>
<td>Microelectronics and Computer Technology Corp.</td>
</tr>
<tr>
<td>Lynn Forester</td>
<td>President</td>
<td>FirstMark Holdings Inc.</td>
</tr>
<tr>
<td>Carol Fukunaga</td>
<td>Senator</td>
<td>Hawaii State Assembly</td>
</tr>
<tr>
<td>Haynes G. Griffin</td>
<td>President</td>
<td>Vanguard Cellular Systems Inc.</td>
</tr>
<tr>
<td>George H. Helmeier</td>
<td>President</td>
<td>Bell Communications Research, Inc.</td>
</tr>
<tr>
<td>Susan Herman</td>
<td>General Manager</td>
<td>Department of Telecommunications, County of Los Angeles</td>
</tr>
<tr>
<td>James R. Houghton</td>
<td>Chairman</td>
<td>Corning Inc.</td>
</tr>
<tr>
<td>Stanley Hubbard</td>
<td>Chairman</td>
<td>Hubbard Broadcasting</td>
</tr>
<tr>
<td>Robert L. Johnson</td>
<td>President</td>
<td>Black Entertainment Television</td>
</tr>
<tr>
<td>Robert E. Kahn</td>
<td>President</td>
<td>Corporation for National Research Initiatives</td>
</tr>
<tr>
<td>Deborah Kaplan</td>
<td>Vice President</td>
<td>World Institute on Disability</td>
</tr>
<tr>
<td>Mitch Kapor</td>
<td>Chairman</td>
<td>Electronic Frontier Foundation Inc.</td>
</tr>
<tr>
<td>Delano E. Lewis</td>
<td>President</td>
<td>National Public Radio</td>
</tr>
<tr>
<td>Alex J. Mandl</td>
<td>Executive Vice President</td>
<td>American Telephone &amp; Telegraph</td>
</tr>
<tr>
<td>Edward R. McCracken</td>
<td>President</td>
<td>Silicon Graphics Inc.</td>
</tr>
<tr>
<td>Nathan P. Myhrvold</td>
<td>Senior Vice President</td>
<td>Microsoft Corp.</td>
</tr>
<tr>
<td>Mac Norton Jr.</td>
<td>Attorney</td>
<td>Wright, Lindsey &amp; Jennings</td>
</tr>
<tr>
<td>Vance K. Opperman</td>
<td>President</td>
<td>West Publishing Co.</td>
</tr>
<tr>
<td>Jane Smith Patterson</td>
<td>Adviser</td>
<td>Office of the Governor, North Carolina</td>
</tr>
<tr>
<td>Bert C. Roberts Jr.</td>
<td>Chairman</td>
<td>MCI Communications Corp.</td>
</tr>
<tr>
<td>John Sculley</td>
<td>Chairman</td>
<td>Spectrum Information Technologies, Inc.</td>
</tr>
<tr>
<td>John H. Smith</td>
<td>Commissioner</td>
<td>Oregon Public Utility Commission</td>
</tr>
</tbody>
</table>
Appendix E: Advertising on the Internet — frequently asked questions and answers

Version 1.0 — 6 March, 1994

Copyright notice. This document is Copyright 1994 by Strangelove Internet Enterprises, Inc., all rights reserved.

How to contact the author

Michael Strangelove can be contacted by e-mail to Mstrange@Fonorola.Net or by postal mail to SIE Inc, 208 Somerset Street East, Suite A, Ottawa, Ontario, K1N 6V2, Canada. Telephone: 613-565-0982, fax: 613-569-4433.

Introduction

Advertisers spend billions of dollars every year to communicate their message to potential consumers. Now businesses are discovering that they can advertise to the Internet community at a fraction of the cost of traditional methods. With tens of millions of electronic mail users out there in cyberspace today, Internet advertising is an intriguing opportunity not to be overlooked. When 1998 rolls around and there are one hundred million consumers on the Internet, we may see many ad agencies and advertising-supported magazines go under as businesses learn to communicate directly to consumers in cyberspace.

How can a consultant, corporation, or an entrepreneur effectively use electronic mail to communicate to the Internet user? The following document is intended to identify and answer frequently asked questions about Internet-facilitated marketing. This FAQ is based on the book, ‘How to Advertise on the Internet: An Introduction to Internet-facilitated Marketing’ (April 1994). If there are questions you have about Internet advertising that are not addressed here, or if you have comments about how to improve this document, please feel free to contact me at Mstrange@Fonorola.Net.

Potential advertisers take note — do your homework before blasting onto the Internet. This virtual community has some very strong feelings about inappropriate activity, and the penalties for incorrect advertising methods could be international hate mail to you, your boss, and your stock holders.

Nota bene: It is the intention of the author to promote the responsible business use of the Internet. Businesses will be making extensive use of the Internet for marketing and advertising, regardless of how Internet members feel about the non-commercial origins of the Internet. The Internet is not destined to be a TechnoUtopia, but simply a microcosm of global society, with all its warts and flowers. This FAQ is intended as a proactive measure to ensure that the commercial
Internet user has adequate information about Internet culture so as to contribute to the ongoing development of Electric Gaia.

Questions answered in this FAQ

Is advertising allowed on the Internet? Is advertising on the Internet New? Is the Internet a Mass Market? Is unsolicited advertising permitted? Can I send an e-ad to every Internet user?

Internet advertising tips

Find out what is acceptable; post only to appropriate forums; keep it short; avoid sensationalism; create your own forum; interact with the Internet community.

Is advertising allowed on the Internet?

It is surprising how many people still see the Internet as a non-commercial, academic, and technical environment. Over fifty percent of the Internet is populated by commercial users (that equals five to ten million commercial users). The commercial Internet is the fastest growing part of cyberspace, which is doubling in size every year. There are more business users of the Internet than the total number of all the users of all commercial networks combined.

Over three years ago the US National Science Foundation lifted its restrictions against commercial use of the Internet’s American backbone. Now an Internet address on business cards is the latest craze. As the Internet is not owned by any one company or nation, the only real restrictions placed upon users are by the consensus of the virtual community itself. The trick to effective Internet advertising is taking the time to learn what is, and what is not, acceptable within any one of the more than 7,000 online conferences.

The one major exception to this is any Internet users who have academic accounts provided by their university or research institute. It is almost certain that if you have an academic Internet account, you are forbidden to engage in commercial activity over your university’s Internet connection. This may also hold true for many FreeNets -if you are uncertain about local authorised use policy, ask your Internet provider or system postmaster.

It should be noted that Usenet is not less commercial than the rest of the Internet. Gone forever are the days when the Internet was a private club for the techno-elite.

Is advertising on the Internet new?

Even among many long-time Internet users, there is a perception that Internet advertising is a new phenomenon. It is not. In the mid-eighties, when the Internet was largely an academic, scientific and technical community, commercial activity was still allowed if it was in support of research efforts. This meant that right from
the first days of the Internet, there were software developers, publishers, consultants, and technicians hawking their wares to the academic community. Advertising has been taking place on the Internet since its beginning. The problem facing the Internet community is that the bigger the community gets (and it is going to be mindbogglingly big), the more it will attract the attention of advertising agencies.

**Is the Internet a mass market?**

For quite some time to come, the Internet will never represent a mass market such as TV where content is controlled and packaged to a limited number of predefined and demographically homogenous audiences consisting of millions of viewers. There are no mass markets on the Internet — only micro communities with distinct histories, rules and concerns. These communities are gathered into thousands of discussion forums ranging from hundreds to thousands of participants, but there are no groups of ‘millions.’ The challenge of the Internet-facilitated business is to find a way to reach these virtual communities on their terms, respecting their local customs. The Internet is big, very big, but it is not a mass market that can be easily reached through mass mailing.

**Is unsolicited advertising permitted?**

Unsolicited advertising does indeed take place every day on the Net, and there even exists on company that sells access to over one million Internet addresses for direct e-mail advertising. Unsolicited advertising is a grey area of Internet culture, and therefore requires very careful planning and execution to avoid the wrath of an extremely vocal community.

Unsolicited advertising has been taking place for quite some time, but must be done with extreme caution. There is no one to tell you not to send unsolicited commercial e-mail on the Internet, but if you send out 10,000 annoying advertisements, be prepared to receive 10,000 complaints. Also, companies that disregard Internet users’ wishes are likely to find that the Internet community has a long memory (as any ‘oral’ culture does) and is quite capable of engaging in anti-advertising campaigns and boycotts.

In this new interactive, digital, wired-to-the-bellybutton world, bulk unsolicited advertising is unnecessary, bad netiquette, and simply lazy — especially when there are so many creative alternatives. The author has no wish to support the rise of ‘door-to-door’ salespeople in cyberspace and therefore is intentionally censoring contact information from this FAQ on firms that sell Internet e-mail addresses and consult in bulk unsolicited e-mail advertising.

**Can I send an e-ad to every Internet user?**

As Editor of *The Internet Business Journal*, Aneurin Bosley is frequently asked if it is possible to send an electronic mail advertisement (e-ad) to every user on the Internet. I always find it somewhat disturbing that there are companies out there who would want to do this. Fortunately for the Internet, it is not possible to send
an e-ad to every person on the Internet. Unfortunately for the Internet, it is probably only a matter of time before some sick mind figures out a method of simultaneously annoying every Internet user. For now at least, there is no way to post an e-mail message to every Internet user, nor, in this writer’s opinion, should such a tool be developed.

**Internet advertising tips**

**Find out what is acceptable**

Within some Internet forums, any commercial activity, no matter how subtle, is unacceptable and will be met with a strong negative response (usually called ‘flaming’). Take time to ‘listen in’ to the forum to which you intend to post. Notice what other people post and what the group reaction is to commercial messages. If a press release or product announcement is met with intense flaming, then do not risk alienating this group of Internet users with your commercial message.

**Post only to appropriate forums**

Begin your market research by identifying the appropriate online conferences (also called forums, lists, or newsgroups). If you are selling purebred dogs, do not post your message to the cat lover’s list. Some forums have FAQ (Frequently Asked Questions). Read these files to determine the nature of the forum and acceptable use policies.

**Keep it short**

Avoid posting long e-mail messages. Your product or service announcements would never exceed two screens in length (about 50 lines long). Many individuals on the Internet receive a considerable amount of e-mail, so your message must be short and to the point if it is going to be read at all. You can note in your posting that further details are available upon request.

**Avoid sensationalism**

The Internet community is content-oriented, whereas most advertisers deal in style, metaphor, image and hype. Traditional advertising copy will not go over well at all on the Net. The Internet community appreciates quality, filtered information, so find a way to add value to your message. Couch your message within a commentary on industry trends, create an electronic newsletter that provides a range of related information, enter into dialogue with the forum about surrounding issues. Remember that nothing is more obvious in low ASCII than empty hype.

**Create your own forum**

It is possible to create a Usenet newsgroup for discussion of your products (Usenet is received by most Internet users and contains over six thousand newsgroups). Many companies have already done so, such as ZEOS, which has a newsgroup
called biz.zeos.general. This is a form of passive Internet-facilitated marketing. Passive advertising allows a business to create a forum on the Internet and invite the rest of the Internet to join in. By creating your own forum, moderating the submissions (filtering out irrelevant postings), and providing high quality information, not only about your products but about your particular commercial sector, you will establish a growing readership in much the same way that newsstand magazines function.

Interact with the Internet community

For the immediate future, the costs of Internet-facilitated advertising will not be associated with expensive visual productions (at least until the domination of Mosaic and similar tools), but with the labour required to dialogue with the desired market areas found within over seven thousand discussion forums. This labour factor for truly responsible, responsive, and effective Internet advertising will become a critical consideration as the staggering Internet growth rate pushes these numbers to tens of thousands of forums and hundreds of millions of users over the next decade.

The business world is going to have to learn a new language when it communicates to the Internet community - the language of content-based, interactive, community-oriented dialogue. Unidirectional pontificating coming from the lofty heights of corporate sales and marketing offices will only alienate the typical Internet user. To be fully accepted by the majority of Internet users, a business will need to participate in the virtual communities they wish to reach. This means that business must be willing and prepared to enter into dialogue in an appropriate manner on the appropriate forums. Unlike any other medium familiar to advertisers, the Internet is fully bi-directional — be prepared to answer for your product or service if it is less than 100% satisfactory. The Internet user will not hesitate to tell you otherwise, as well as tell the rest of the Internet community!

A word of warning

Most advertisers will fail at their initial attempt at Internet-facilitated advertising. This is not at all surprising in light of the fact that most advertising in any medium is woefully ineffective, mind-bogglingly boring and uncreative at best — deceptive and annoying at worst.

Why will advertisers fail when they succumb to the seduction of the virgin fields of the Internet? Traditional advertising will fail to achieve results on the Internet because this virtual community is oriented towards content. In contrast, advertisers usually focus on image and style — broad archetypes delivered to mass audiences. But the language of the Internet, for the majority of its population, and for some time to come, is low ASCII (Aa-Zz, 1-9 text plus a few miscellaneous characters). More than being a mainly text-based environment, the Internet is first and foremost an oral culture, where keyboard mediates the spoken word to a complex matrix of subcultures among users numbering in the tens of millions. Sensitivity to Internet culture will define success for any business entering into this global matrix. Remember that today’s Internet arose out of a non-commercial environment. Be
forewarned — the Internet is not television, not the post office and certainly not yours to do with as you please.

About the author