Online Usage and the Digital Divide

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Presentation to:
The Digital Divide: An Inhibitor of Growth?
Columbia Institute for Tele-Information
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Objectives

- Add to the digital divide discussion by:
  - Examining online behavior of 300,000+ Internet users
  - Accounting for differences in income and density (location)
  - Testing for systematic differences between narrowband and broadband users

Usage | Internet Access

We look for systematic differences between the types of access to:
- guide understanding of behavioral implications of a “digital divide”.

Can we judge the value of the Internet by examining online activity?

Questions

- What is the digital divide?
  - NTIA Falling Through the Net: Toward Digital Inclusion
    http://search.ntia.doc.gov/pdf/fttn00.pdf
- Value of online activities?
  - Subjective
- Does the availability of broadband access impact a user’s online behavior?
  - Unknown

Starting Point

- Internet access -- available to most households
- PC ownership and internet access directly linked to income
- PC ownership and internet access directly linked to education

NTIA: Falling Through the Net: Toward Digital Inclusion pp. xv -xvii;
http://search.ntia.doc.gov/pdf/fttn00.pdf
Click Stream data for:
- 208,000 broadband users
- 182,800 narrowband users.

Source: Plurimus Corporation (www.plurimus.com)

User organized by:
- type of access
- level of income and density
- there were 7 levels of income
- 5 levels of density.

Source: Plurimus Corporation (www.plurimus.com)

Click Stream data for:
User organized by:
User evaluated based on reach to a type of web site.
- 7 primary site categories
- 98 sub categories

Source: Plurimus Corporation (www.plurimus.com)

Internet Access:
- Approximately 50%
- Varies with income
  - 23% penetration for those with income less than $25k
  - 78% penetration rate for households with income > $75k
  - Non metro is 36%; metro rate is 48%;
  - suburban is 55%

Source: Centris® Omnibus survey for period April – May, 2001

<table>
<thead>
<tr>
<th>Internet Usage</th>
<th>3.1.X.B</th>
<th>3.2.X.B</th>
<th>3.3.X.B</th>
<th>3.4.X.B</th>
<th>3.5.X.B</th>
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</thead>
<tbody>
<tr>
<td>Sample Size</td>
<td>175</td>
<td>952</td>
<td>5183</td>
<td>6091</td>
<td>1492</td>
</tr>
<tr>
<td>Motion Pictures</td>
<td>9%</td>
<td>9%</td>
<td>7%</td>
<td>9%</td>
<td>10%</td>
</tr>
<tr>
<td>Business &amp; Companies</td>
<td>7%</td>
<td>7%</td>
<td>7%</td>
<td>7%</td>
<td>7%</td>
</tr>
<tr>
<td>Entertainment</td>
<td>3%</td>
<td>3%</td>
<td>3%</td>
<td>4%</td>
<td>4%</td>
</tr>
<tr>
<td>Food &amp; Drink</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>General Merchandise</td>
<td>5%</td>
<td>5%</td>
<td>6%</td>
<td>6%</td>
<td>6%</td>
</tr>
<tr>
<td>Marketing Companies</td>
<td>15%</td>
<td>15%</td>
<td>15%</td>
<td>15%</td>
<td>15%</td>
</tr>
<tr>
<td>Medical Services</td>
<td>15%</td>
<td>15%</td>
<td>15%</td>
<td>15%</td>
<td>15%</td>
</tr>
<tr>
<td>Retail</td>
<td>3%</td>
<td>3%</td>
<td>3%</td>
<td>3%</td>
<td>3%</td>
</tr>
<tr>
<td>Real Estate</td>
<td>7%</td>
<td>7%</td>
<td>7%</td>
<td>8%</td>
<td>8%</td>
</tr>
<tr>
<td>Software</td>
<td>8%</td>
<td>8%</td>
<td>8%</td>
<td>8%</td>
<td>8%</td>
</tr>
<tr>
<td>Telecommunications</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Source: Plurimus Corporation (www.plurimus.com)

Broadband Access Statistics
- DSL and cable modem 6.9%
- Increases to 17.6% -- households with income > $75k
- Penetration rates
  - 2.7% for non metro areas;
  - 7% for metro areas
  - 8.7% for suburban areas

Source: Centris® Omnibus survey for period April – May, 2001
Categories and Sub-categories

Entertainment Services
- Adult Services
- Anime
- Arts
- Astrology
- Events
- Gambling
- Games
- Movies
- Music
- Personal Pages
- Radio
- Sports
- Television

Information Services
- Classifieds
- Chat (general)
- Community
- E-cards
- Email
- Event Subscription/Reminders
- Messaging
- Incentive Site
- Internet Telephone
- Portal
- Search
- Security
- Software

Internet
- Chat (general)
- Community
- E-cards
- Email
- Event Subscription/Reminders
- Messaging
- Incentive Site
- Internet Telephone
- Portal
- Search
- Security
- Software

Reach

- Narrowband
  - Search 82%
  - Software 81%
  - E-Mail 74%
  - News 68%
  - Community 62%
  - Games 58%
  - Stream Media 55%
  - Chat 53%
  - E-cards 47%
  - Computers 45%
  - Auction 44%
  - Sports 42%
  - Music 40%

- Broadband
  - Search 60%
  - News 48%
  - E-Mail 45%
  - Games 44%
  - Organization 42%
  - Music 41%
  - Stream Media 34%
  - Community 30%
  - Technology 30%
  - Computers 29%
  - E-cards 27%
  - Adult Services 27%

Reach – By Major Category

- Narrowband
  - Business 78%
  - Entertainment 83%
  - Finance 68%
  - Information 87%
  - Internet 99%
  - Online Shop 91%
  - Travel 39%

- Broadband
  - Business 72%
  - Entertainment 81%
  - Finance 55%
  - Information 80%
  - Internet 98%
  - Online Shop 87%
  - Travel 29%

Source: NTIA pp. 48-49

Online Activities: NTIA Report

- E-mail 80%
- Search 60%
- News 43%
- Education 35%
- Job Related 35%
- Online Shopping 30%
- Job Search 16%

Source: NTIA pp. 48-49

Online Shopping
- Adult Products
- Auction
- Books
- Business Products
- Clothing
- Computer Shopping
- Computers
- Electronics
- Finance
- Food & Drink
- General Merchandise
- Health
- Hair
- Home
- Jewelry
- Kitchen
- Law
- Local Portal
- Maps
- News
- Organization
- Politics
- Sports
- Special Interest
- Technology
- Vehicle Information
- Weather

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- Broadband
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  - Internet 98%
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  - Travel 29%

Source: Plurimus.com
Narrowband - Broadband

- Broadband
  - Median Minutes: 568
  - Median # Sites: 26
- By Income
  - Minutes | Sites
  1       | 605 31
  3       | 532 25
  5       | 607 26
  7       | 530 24

Source: Plurimus.com

Narrowband - Broadband

- Broadband
  - Median Minutes: 519
  - Median # Sites: 42
- By Income
  - Minutes | Sites
  1       | 605 31
  3       | 532 25
  5       | 607 26
  7       | 530 24

Source: Plurimus.com

Findings - I

- Broadband users:
  - On line on average 10% longer
  - “Visit” 40% less sites
- Reach percentage is uniformly higher for narrowband users

Findings - II

- What is missing?
  - Usage can be measured using the following metrics:
    - Reach Percent (% of households that reach site(s))
    - Frequency (# of times site(s) is/are visited per household)
    - Duration (average length of time at site(s))
    - Value (indicator of a secure transaction; number of bytes transferred)
  - Frequency, duration and value forthcoming
Implications
- Reach statistics do not point to additional value for broadband
- Median usage gains for broadband small
- Reach distributions call into question the overall value of online activities as it pertains to the digital divide debate
- Income and density are not major predictors of usage
Conclusion

- Analysis of reach percentages should inject a note of caution when projecting the consequences of the digital divide.
- Priority of reach (ranking) not explained by density or income— or by type of access.
- Analysis leaves open a number of issues that can only be addressed once frequency and time information becomes available.

With Respect to Broadband

Initial evidence from the Plurimus data sheds no compelling reason why the government should adopt a policy of general availability of broadband access.

While it is the case that the availability of broadband access will lead to increased usage—the value of that incremental usage is at issue.

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