

## Online Usage and the Digital Divide

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Presentation to:  
**The Digital Divide: An Inhibitor of Growth?**

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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 a “digital divide”.
- Can we judge the value of the Internet by examining online activity?

## Usage | Internet Access

- We look for systematic differences between the types of access
- Can we judge the value of the Internet by examining online activity?
- And, when we do, what do we find?

## Questions

- What is the digital divide?
  - NTIA Falling Through the Net: Toward Digital Inclusion <http://search.ntia.doc.gov/pdf/ftn00.pdf>
- Value of on 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/ftn00.pdf>

## Plurimus

- Click Stream data for
  - 208,000 broadband users
  - 182,800 narrowband users.

Source for the usage information is Plurimus Corporation ([www.plurimus.com](http://www.plurimus.com))

## Plurimus

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

Source for the usage information is Plurimus Corporation ([www.plurimus.com](http://www.plurimus.com))

## Plurimus

- 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 for the usage information is Plurimus Corporation ([www.plurimus.com](http://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

## 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

## Usage Metrics

Internet Usage	1 X 1 X B	1 X 2 X B	1 X 3 X B	1 X 4 X B	1 X 5 X B
Sample Size	68	405	1688	2086	1159
Median Minutes of Use	609	640	558.5	575	565
Business & Companies	71%	77%	72%	72%	72%
Books	6%	2%	2%	2%	2%
Business Products & Services	13%	13%	13%	12%	13%
Clothing	3%		1%	1%	1%
Computers	6%	9%	7%	9%	8%
Consulting	1%	1%	1%	1%	0%
Electronics	3%	3%	3%	4%	4%
Food & Drink	7%	4%	3%	4%	3%
General Merchandise		1%	1%	1%	0%
Marketing Companies	36%	30%	28%	28%	27%
Medical Services		1%	0%	1%	1%
Music	6%	1%	1%	0%	0%
Real Estate	7%	7%	7%	8%	6%
Software	57%	49%	46%	47%	42%
Telecommunications	29%	33%	18%	22%	26%

Source: Plurimus.com

### Categories and Sub-categories

Entertainment Services	Information Services
Adult Services	Classifieds
Arts	Genealogy
Astrology	Health
Events	Jobs
Gambling	Legal
Games	Local Portal
Movies	Maps
Music	News
Personal Pages	Organization
Radio	Politics
Sports	Science
Sweepstakes	Special Interest
Television	Technology
Financial/Insurance Services	Vehicle Information
Banking	Weather
Credit	
Finance	
Insurance	
Online Trading	

### Categories and Sub-categories

Internet	Online Shopping
Chat (general)	Adult Products
Community	Auction
E-cards	Books
E-mail	Business Products
Email Subscription/Reminder	Clothing
Hosting	Comparison Shopping
ISPs	Computers
Incentive Site	Electronics
Internet Telephone	Flowers
Portal	Food & Drink
Search	General Merchandise
Security	Medicines, Health and Beauty
Streaming Media	Music
Web Design	Software
Web-based Applications	Sporting Goods
	Toys
	Vehicles
	Video
	Travel/Places
	Airlines
	Cruises
	Hotels
	Places
	Rental Cars

### Broadband – Narrowband Comparison

Is there a Difference?

### Reach

<b>Narrowband</b>		<b>Broadband</b>	
- Search	82%	- Software	63%
- Software	81%	- Search	60%
- E-Mail	74%	- News	48%
- News	68%	- E-mail	45%
- Community	62%	- Games	44%
- Games	58%	- Organization	42%
- Stream Media	53%	- Music	41%
- Chat	52%	- Stream Media	34%
- E-cards	47%	- Community	30%
- Computers	45%	- Technology	30%
- Auction	44%	- Computers	29%
- Sports	42%	- E-cards	27%
- Music	40%	- Adult Services	27%

### 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

### Reach – By Major Category

<b>Broadband</b>		<b>Narrowband</b>	
- Business	72%	- Business	78%
- Entertainment	81%	- Entertainment	83%
- Finance	55%	- Finance	68%
- Information	80%	- Information	87%
- Internet	98%	- Internet	99%
- Online shop	87%	- Online shop	91%
- Travel	29%	- Travel	39%

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 568
  - Median # Sites 26
- By Income
 

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

	Minutes	Sites
1	605	39
3	546	47
5	481	40
7	536	39

Source: Plurimus.com

### Narrowband - Broadband

- Broadband
  - Median Minutes 568
  - Median # Sites 26
- By Density
 

	Minutes	Sites
1	595	28
3	600	27
5	501	23
- Narrowband
  - Median Minutes 519
  - Median # Sites 42
- By Density
 

	Minutes	Sites
1	507	41
3	504	41
5	540	43

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 - I

- Broadband users:
  - Reach percentage is uniformly higher for narrowband users
- Observations do not vary in any systematic
  - by income or
  - density

### Findings - II

What is missing?

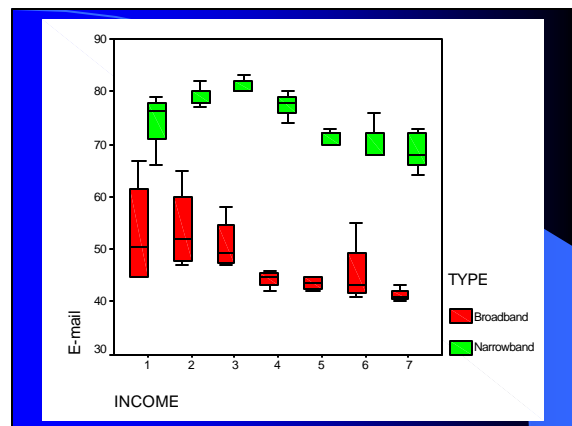
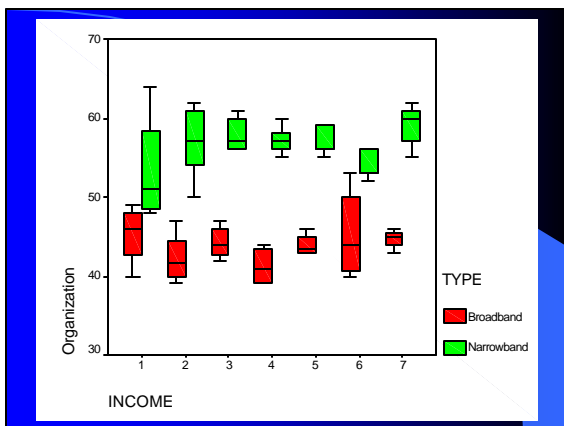
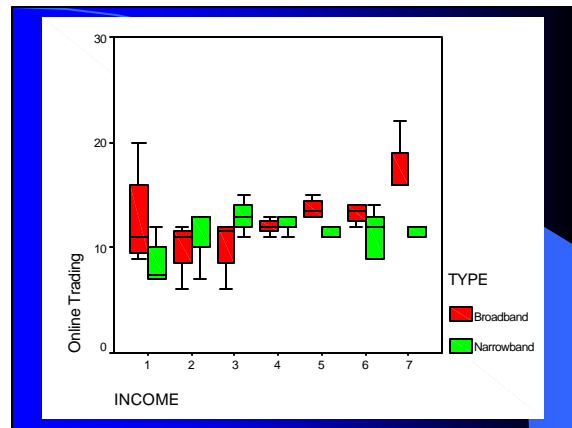
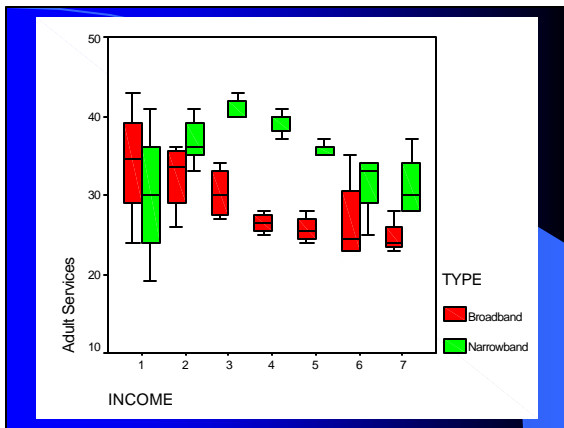
- Usage can be measured using the following metrics –
  - ✓ Reach Percent (% of households that reach site(s))
  - ✓ Frequency (# of times site(s) is (are) visited per household)
  - ✓ Duration (average length of time at site(s))
  - ✓ Value (indicator of a secure transaction; number of bytes transferred)
- 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

## Sample Distributions

### Online Activity by Income



### 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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