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The “Digital Divide”

Defined (typically): Info-haves and info have-nots—but wait! There’s more…

Contours:
- Socio-economic status
- Race
- Gender
- Culture of expertise, general culture, and cultural capital

Is this just because “closure” in IT designs & meanings hasn’t happened yet? And cars…?

 Might it be that there’s just an adoption lag?
Two Universes of the Digital Divide

In the “developed” world (not including the “3rd World” within—abandoned social groups, etc.) a specific set of issues
- information overload prevails
- problems in monopoly-controlled access
- Skill and cognitive gaps; a continuing need for “info literacy”

In the 3rd world, different issues
- Basic lack of access and infrastructure to provide it
- Very real cost issues
- Amazing human tendency to readapt and repurpose existing technologies

Common problem: “technical fixes” are not the answer, as solutions cannot be parachuted in.
Some Claim That We’ll All Grow Out of the Problem…
Rates of Adoption of New Domestic Technologies

Source: Undetermined
"Standard Model" of Costs for New Technologies
Economic Trends in Technological Innovation
(nothing to scale)

Examples:
- Tobacco and slaves, 17th century
- Sugar and slaves, 18th century
- Canals and railroads, 19th century
- Electricity and InfoTech, 20th century

- Technology stock prices (the bubble)
- Per-unit technology acquisition costs
- Rate of new technology acquisition
- Long-term rate of productivity increases
Not So!

In fact, popular adoption rates for PCs and Net access in the US \( (\text{not in the 3rd World!}) \) have largely flattened since 2001/2

- Caveat: still rising adoption among elderly
- Causes: lack of interest & cost of access—about 50/50 as explanation

US has highest costs (and often, lowest quality) for broadband access compared to EU, Korea, Japan, Singapore

- Lack of competition in broadband service providers—hence the promise of municipal WiFi, broadband over powerline
- Minimal regulatory controls, esp. over QoS, competition, and costs; constant side battles over “must carry” rules, etc.
- Replicates mobile phone impasse (multiple standards, high costs)

Problem remains: why the lack of interest? Fear? Indifference?

Will Net access in the US & the 3rd World be a “luxury good”?
Policy Solutions: Government Intervention Helped Before

- **Telephones**
  - Lifeline rates provided cross-subsides from rich to poor users
  - Regulation to prevent monopoly pricing

- **Electricity**
  - Rural Electrification Administration helped install service in rural areas
  - Lifeline rates as well, and regulated pricing

- **Automobiles**
  - Federal highway subsidies & construction
  - Driver’s education in schools led to more affordable insurance
A New Wrinkle in the US: Revising the Telecommunications Act of 1996

An obsolete distinction: “communications” vs. “data”

Initially a difference invented by RBOCs (“Baby Bells”) to charge more for the latter

Now, each service—wired phones, cell phones, cable, perhaps even power lines—can carry any sort of packets, from on-demand video to voice and broadband

Only wired telephones have “universal service” obligation

Uneven application of “open wires” principle

But wired phones are (perhaps) obsolete

Will they become the “tenements” of the information world, a ghetto for the poor?

Can we know which services will predominate a decade from now?

Will we structure into the law a new form of digital divide?
But Digital Difference Isn’t Just About Technology…

- Throwing hardware at a problem doesn’t necessarily work, and it’s expensive
  - The US malady of the “technical fix”—are we culturally hard-wired for this?
  - Examples: did e-voting repair the problems in our electoral system? did trillions of dollars in WMDs end the Cold War? (will they win the “war on terrorism”?)

- Technology is, in the first instance, a human and social creation
  - Technical systems must “fit” into and be congruent with specific social arrangements and needs
  - Users must get a cognitive and cultural “handle” on a technology in order to use it
  - Hint: watch how users adopt and adapt new technologies—grandmothers and the Net, Kerala farmers and SMS
People adopt technologies in their own ways…

And we “repurpose” here—think about blogs…
Non-Economic Barriers to Entry

Education and the tracking system
- Problems of school quality at the local level
  - Poor and minorities
  - Forgotten working class
- Subtle signals of incompetence by race and gender
  - Race: implication that melanin correlates with barbarity and renders people of color too barbaric to do IT
  - Gender: stereotypes of “irrationality” imply that women can’t do the structured thinking needed for IT
  - Is IT about computation or imagination? [Midori vs. Perlman on violins?]

Design issues?
- Problems of “cognitive mapping” (HCI issue)
- Socio-cultural issues of defining “needs”: cellphones for me, javarings for others

Cultural issues: is IT culturally for white men & Asians?
Five Possible Solutions for the US

“Let it alone:” will falling prices for IT equipment and services solve it? Simply the growth of on-line communities?

“Build it and they will come:” Al Gore and the IT/education infrastructure
- Will wiring the schools solve this?
- Free laptops? (and, of course, no training for faculty and stuff…)

“Redesign it:” info kiosks and smart devices

Change the ways of teaching: how-to vs. techno-empowerment

Change the culture, educate the educators
Solutions in the 3rd World…

Government and NGO-funded initiatives are promising, but…

- Problems of paternalism, corruption
- Legacy institutions such as state-owned telcos

Need to develop indigenous technological/intellectual capital—compare Africa and India

- Advantages of open source
- Innovative adaptations may result

“Free market” solutions only enhance the power of existing elites
Delocating Difference: The Globalization of the IT Élite, and Emerging Divides

- Cores of IT communities as unified yet dispersed
  - Silicon Valley vs. Salinas, Ann Arbor vs. Detroit, Bangalore vs. Calcutta, Surenses vs. Longwy
- English as lingua franca of IT; American culture the assumed framework
- Is this illusory: where are the bottom rungs of the IT ladder?
- Is learning by doing possible?
- Overvaluation of documented skills: historical shift from first programmers as secretaries(!), to self-taught & math types, to CS majors
Conclusion: Choices We Face

Basic: Net access and computer use can cut either way
- Creation of egalitarian, democratic e-spaces
- A reinforcement of the power of the haves

Bridging and Joining vs. Dividing, both across nations and within them.

It’s not just about money, but that cannot be ignored
- Computing subcultures vs open cultures
- The digital divide is as much a social/cultural problem as an economic one