



# Ten Myths of ICT4D

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**Presented at Summer School on Computing for Socio-Economic Development**

Microsoft Research India / Indian Institute of Science – June 23, 2010



“Kids in the *developing world need*  
the newest technology...”

“Can the cellphone help  
*end global poverty?*”

“The Internet  
*should be a human right*  
in and of itself.”

# Myths of ICT4D

“... X has never been used to its full capacity in support of economic development. It may be financially impossible to use it in this way. But still the possibility is there. If it is the full power and the full range of teaching were to be used in schools, develop educational patterns, be persuasive and instructive. X were to be used in community development, modernization of the economy, would the break-even point come? Where would the saving in rate of change catch up with the increased cost?”



X = “television”

Source: Schramm, Wilbur. (1964) *Mass Media and National Development: The Role of Information in the Developing Countries*. Pp. 231

## Myth 1

# ~~Technology X will save the world.~~

Wasn't true for  $X$  = radio, TV, or landline phone, despite initial expectations and significant penetration.

Doesn't seem true for  $X$  = PC.

How about  $X$  = mobile phone?

- There are *still* poor communities with no phones.
- Many poor villages have only a few phones.
- Ownership  $\neq$  usage
- Usage  $\neq$  sophisticated usage
- Sophisticated usage  $\neq$  increase in welfare



Given your current financial status,\* would you pay 20% of your income on an ongoing basis for any of the following...?

- Customized news
- Premium banking services
- Tutoring services
- Better health plan

(\*) Or, use your expected financial status as a working adult, if you're a student.

## Myth 2

# ~~Poor people have no alternatives.~~

Costs of goods and services in peri-urban Bangalore.

PC/Internet capability	Existing Alternative	Cost (US\$ per hour)
Search for information	Social networks	Free
Health information	Government health clinic	Free
Agriculture information	Government agricultural extension	Free
Accounting	Notebook and calculator	0.01
Data exchange	Bicycle (local 10 kms, few hours)	0.10
Entertainment	Movie in a theatre	0.10
Music	CD player + buying pirated CDs (MP3)	0.12
News	TV + cable	0.12
Education	Private school in Bangalore	0.12
<b>PC/internet access</b>	<b>1 hour in an Internet café</b>	<b>0.25</b>

If you had 20% of your annual income to spare right now, and had to spend it on one of the following, which would you spend it on...?

- a) A part-time personal assistant
- b) Travel and tourism
- c) iPhone or other gadget

(\*) Or, use your expected financial status as a working adult, if you're a student.



## Myth 3

# ~~Needs are more pressing than desires.~~



*“Needs” are relative. Bill Gates needs his personal assistants and might think we relatively poor people to be foolish to spend on travel or gadgets and other “frivolous” expenses.*

“Needs assessments” typically reveal the same needs, though no one spends on them...

- Better healthcare
- Better education
- Better income opportunities
- Etc.

The same populations often spend lavishly on...

- Ring tones
- Music and movies
- Weddings and funerals
- Customized photos
- Etc.

Photo Credit: Udai Singh Pawar

Sources: Udai Singh Pawar, Nimmi Rangaswamy, Thomas Smyth, Etc.

In which of the following businesses does Google make a profit...?

- a) Search
- b) YouTube
- c) Google Maps

## Myth 4

# ~~“Needs” translate to business models.~~

People don't always pay for “needs.”

- E.g., children's education
- E.g., water purifiers
- E.g., health insurance

“Poverty premium” exists for a reason. Poor populations are...

- Harder to reach
- A greater risk
- Poor! (Less disposable income)

*Someone* has to pay.

- The poor are poor.
- Their governments are poor.
- Their donors are limited.
- Even ads are ultimately paid for by customers, who in this case, are poor.



Do you consistently...?

- a) Exercise
- b) Avoid unhealthy foods
- c) Wear a seatbelt
- d) Start assignments early  
enough to do a good job

## Myth 5

# ~~If you build it, they will come.~~

People don't do what's "best" for them.



- Spend today versus save for tomorrow
- Children's education versus extra labor in field
- 10% of curable blind don't go to have surgery, even when cost-free.
- *Many people don't wear seatbelts or stop smoking, although they understand the implications.*

You and a poor rural farmer are each given a single e-mail account and asked to raise as much money for the charity of your choice.

Who would be able to raise more money?

## Myth 6

# ~~ICT undoes “rich getting richer.”~~

Or, “the Internet democratizes...”

Or, “the world is flat (because of technology)”

- Technology is multiplicative, not additive (e.g., Tichenor et al., 1970)



Photo credit: Rikin Gandhi

Reference: Tichenor, P.J., Donohue, G.A., & Olien, C.N. (1970).  
Mass media and the differential growth in knowledge.  
Public Opinion Quarterly, 34, 158-70.

Which of the following will have the most impact on making you fitter...?

- a) Buying a treadmill
- b) Self-imposed exercise regimen
- c) Hiring a physical trainer



## Myth 7

# ~~Technology permits socio-economic leapfrogging.~~



### Some things do leapfrog:

- Upper class capacity
  - E.g., recent Indian upper class
- “Adopted” poor children
  - E.g., Shanti Bhavan
- New technology over old technology
  - E.g., broadband over dial-up
  - E.g., mobile phone over landline phone

### But...

- Human capacity develops slowly
- Role of technology in education is poorly understood.
- *Owning a treadmill doesn't make you fitter in itself.*

**Education and human capacity  
are the critical things.**

How much does a typical  
US corporation spend on its  
IT budget per user per  
year...?

a) \$70

b) \$700



c) \$7000

d) \$70000

## Myth 8

# ~~Hardware and software are a one-time cost.~~

Conservative, back-of-the-envelope calculations for actual costs per child per year, for a “\$100 PC” per child, amortized over 5 years.

Hardware/software (replaced every 5 years)	\$20	\$100 / 5 years
Distribution, installation, power stability	\$25	Low estimate
“Losses” in distribution	\$20	Conservatively, 20%
Breakage, theft, unintended sale	\$20	e.g., 1 in 5 each year
Connectivity and power	\$15	Low estimate
System administration, maintenance	\$100	= \$10,000/yr / 100 kids
Teacher training	\$50	Maine laptop project cites 1/3 total cost for teacher training
-----		
<b>Total</b>	<b>\$250</b> <b>\$1250</b>	<b>per child, per year cost</b> <b>per child, every five years</b>

What is this man's job?



## Myth 9

# ~~Automated is cheaper and better.~~

### Issues with full automation:

- Barriers of literacy, cost, unfamiliarity, etc.
- User preferences for voice and human-mediated systems
- Accuracy of data collection better through call centers?
- Cost of human system < cost of technology?



Photo Credit: Shikoh Gitau, Jonathan Donner

Sources: A. Ratan, M. Gogineni, Cost Realism in Deploying Technologies for Development, Oxford 2008.

I. Medhi, N. Gautama, K. Toyama. A Comparison of Mobile Money-Transfer Uis. CHI 2009.

S. Patnaik, E. Brunskill, and W. Thies. Evaluating the Accuracy of Data Collection on Mobile Phones: A Study of Forms, SMS, and Voice. ICTD2009.

Are you as rich as you'd like to be?

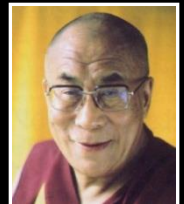
Results 1 - 10 of about 41,100,000 for how to be rich. (0.24 seconds)

Are you as educated as you'd like to be?

 Free Online MIT Course Materials | Electrical Engineeri...

Are you as compassionate as you'd like to be?

A Guide to Cultivating Compassion in Your Life,  
With 7 Practices



Sources: <http://www.google.com/search?q=how+to+be+rich>  
<http://ocw.mit.edu>

<http://zenhabits.net/2007/06/a-guide-to-cultivating-compassion-in-your-life-with-7-practices/>

## Myth 10

# ~~Information is the bottleneck.~~

Information is just one of many deficiencies in developing world.



- Other deficiencies:
  - human capacity
  - economics
  - infrastructure
  - institutional capacity
  - political clout
  - etc.
- Information  $\neq$  education
- Communication  $\neq$  commerce

# Conclusion

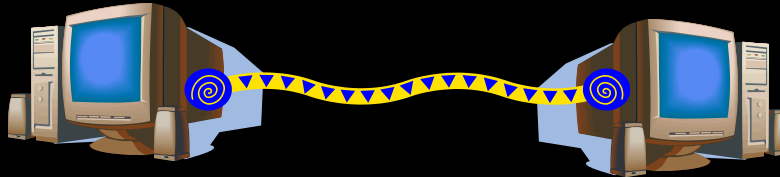


# Agricultural Systems?

farmer



Low literacy  
in local lang



expert



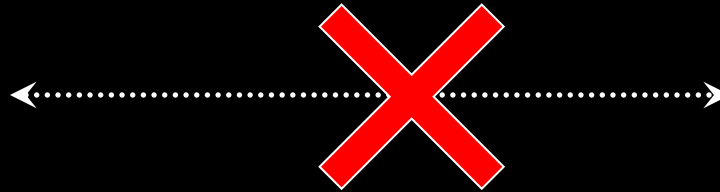
No bank account



Expensive  
credit



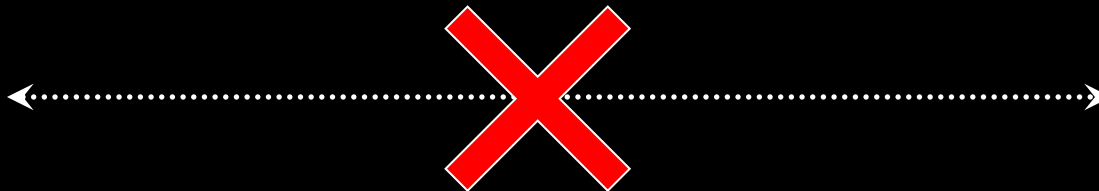
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Credit card



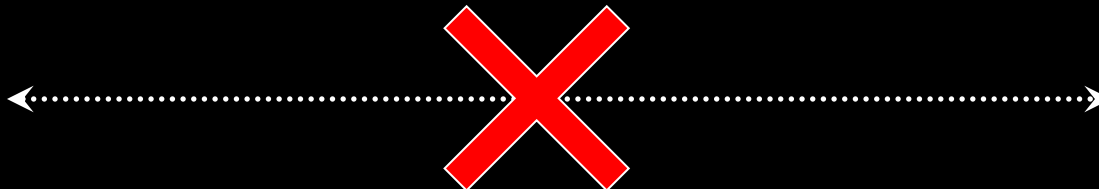
Poor roads



Market



Poor quality  
control



Volume  
buyers

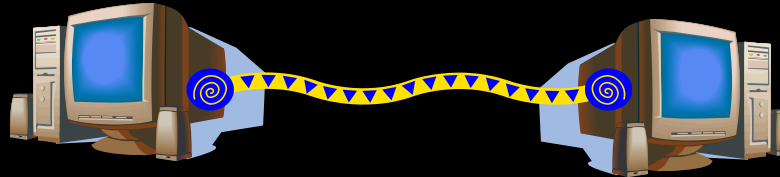
***Device and connectivity not enough!***

# E-commerce?

seller



Low literacy  
in local lang



buyer



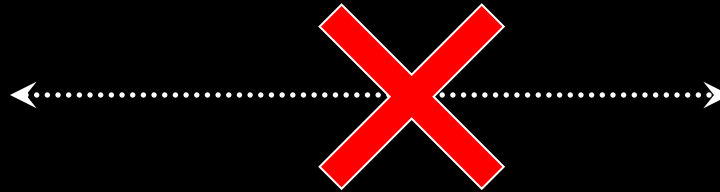
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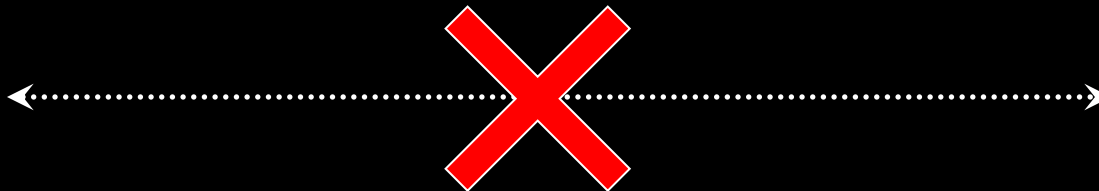
Credit card



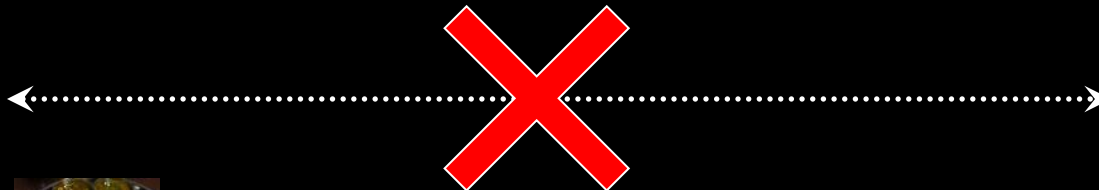
Poor roads



Small scale  
production/  
quality diff



Parcel service



ongoing  
business  
opportunity



Ill health



HH  
consumption  
pressures

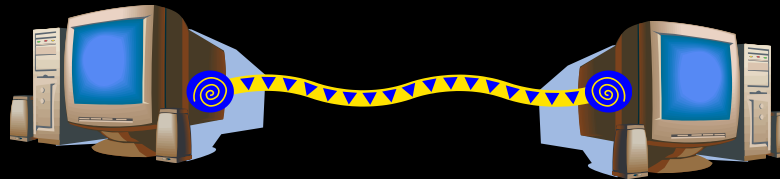
***Device and connectivity not enough!***

# Rural Telemedicine?

patient



Low literacy  
in local lang



doctor



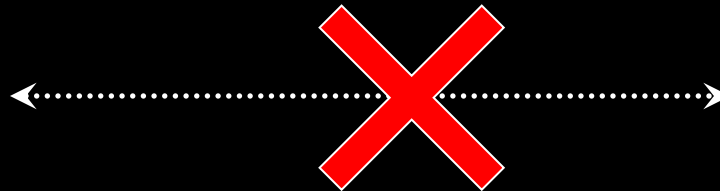
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Expensive  
credit



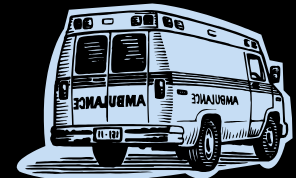
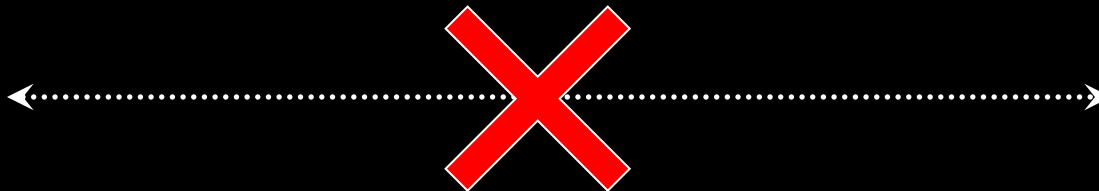
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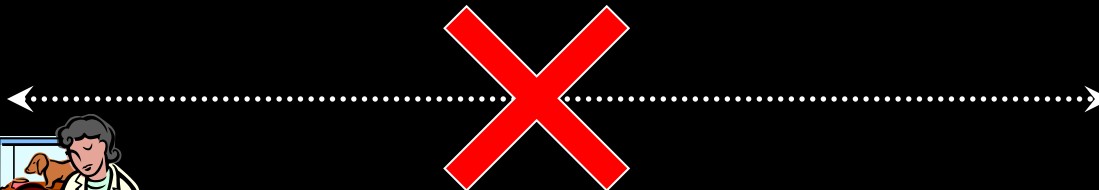
Credit card



Poor roads



Poor  
access to  
drugs



Medicine



Trust absent  
without healthworker

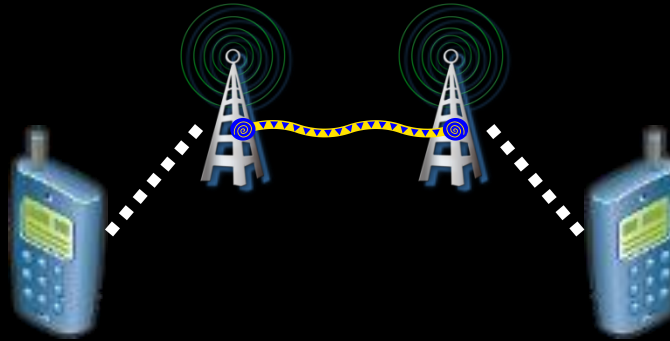
***Device and connectivity not enough!***

# Rural Telemedicine with new device?

patient



Low literacy  
in local lang



doctor



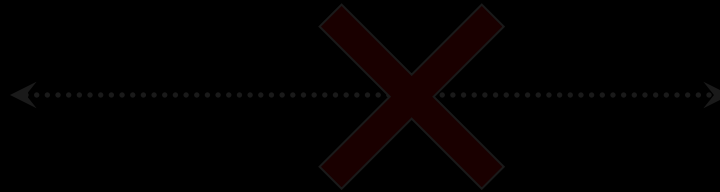
No bank account



Expensive  
credit



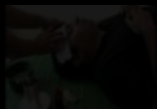
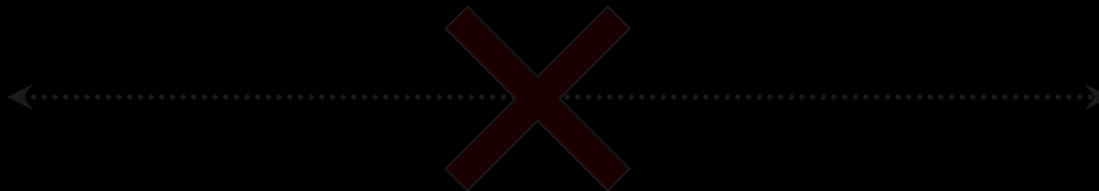
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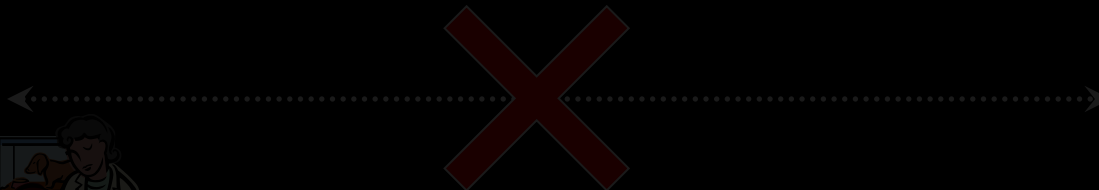
Credit card



Poor roads



Poor  
access to  
drugs



Medicine

Trust absent  
without healthworker



***Device and connectivity not enough?***

# Successes Exist

PCs for NGO / MFI back ends

- Unsung success

Grameen Village Phone

- Mobile killer app: voice!

M-PESA

- Money transfer (\$160M in first year)

Same-language subtitling for literacy

- Better literacy for 200M+ people

Long-distance WiFi for eye care

- Enabled 50,000+ consultations

Etc.



# Technology is Just One Part

## Physical

building,  
goods,  
transport,  
roads

## Human

education,  
computer literacy,  
motivation,  
awareness

## Social

institutions,  
norms,  
political support

## Financial

operational costs,  
maintenance,  
training

## Digital

hardware,  
software,  
connectivity,  
content





# In the *Developed* World...

(includes wealthier segments of developing countries)

## Physical

building,  
goods,  
transport,  
roads

## Human

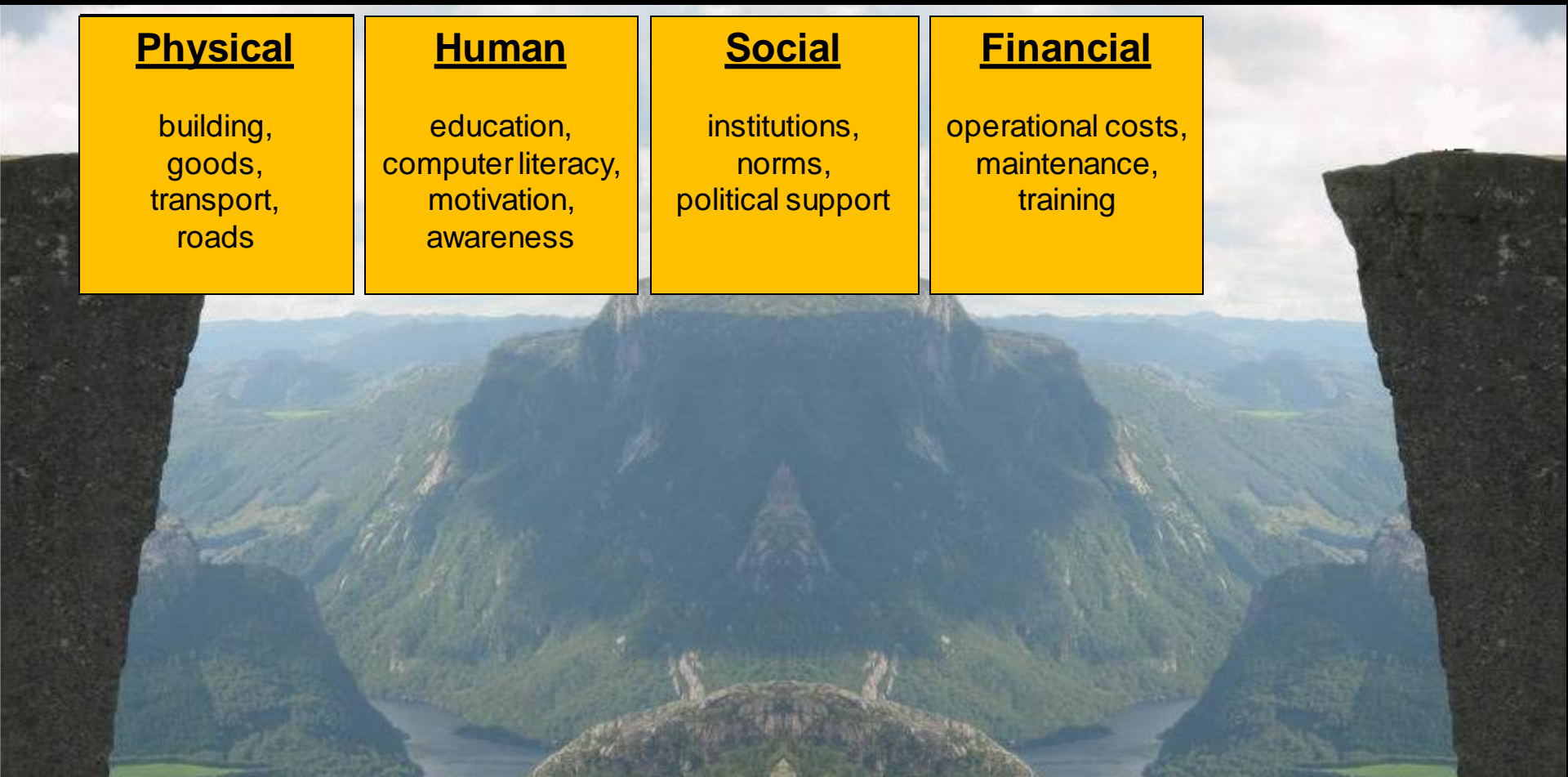
education,  
computer literacy,  
motivation,  
awareness

## Social

institutions,  
norms,  
political support

## Financial

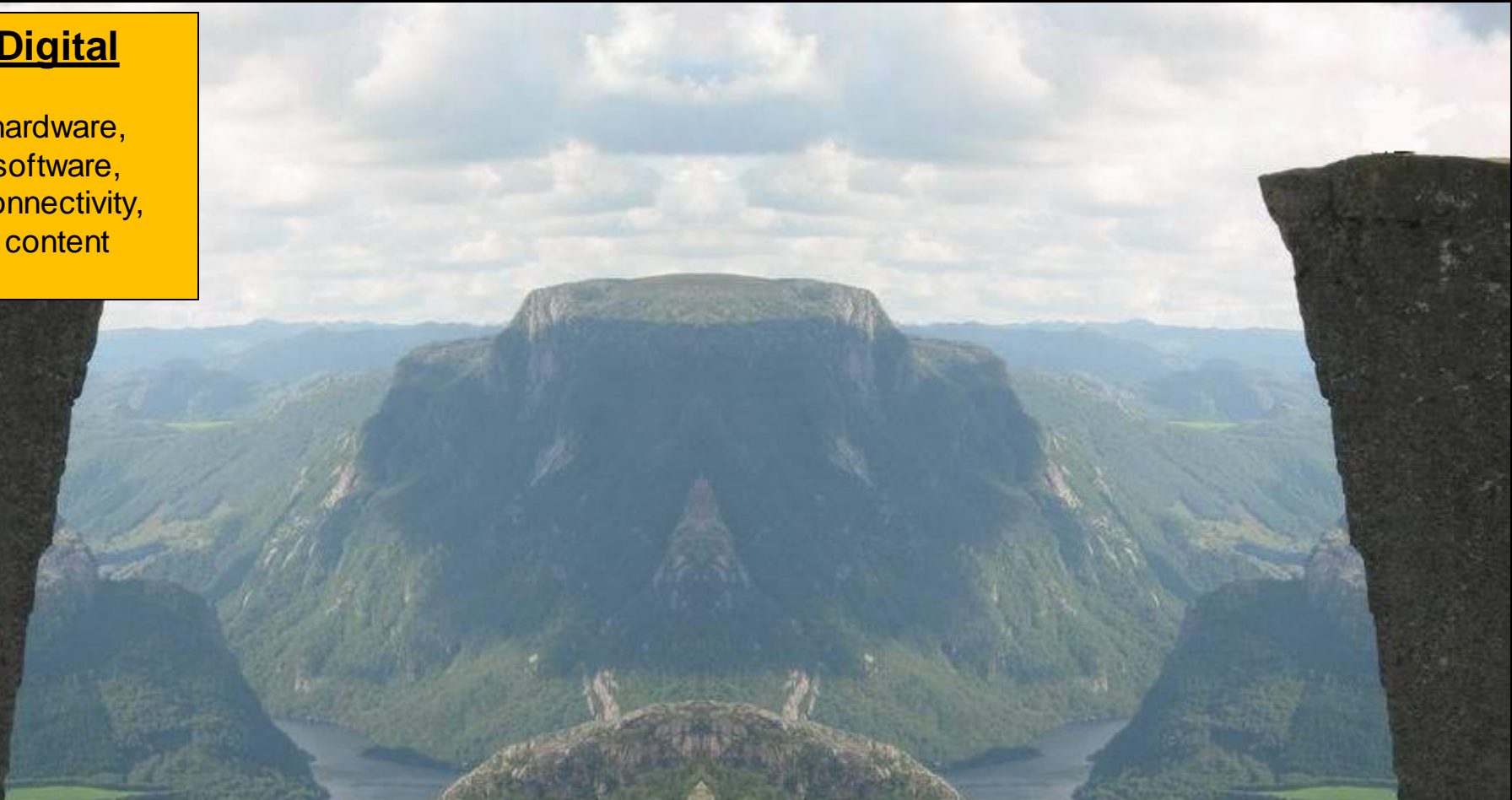
operational costs,  
maintenance,  
training



# In the *Developing* World...

## Digital

hardware,  
software,  
connectivity,  
content





*Technology **magnifies** human intent and capability.*

*Technology itself requires support from well-intentioned, competent people or organizations.*

*Successful ICT4D interventions work as a part of well-intentioned, competent organizations.*

“Kids in the *developing world* need  
the **newest technology**...”

“Can the **cellphone** help  
*end global poverty?*”

“The **Internet**  
*should be a human right*  
in and of itself.”

“Twitter is  
changing the way  
we live.”

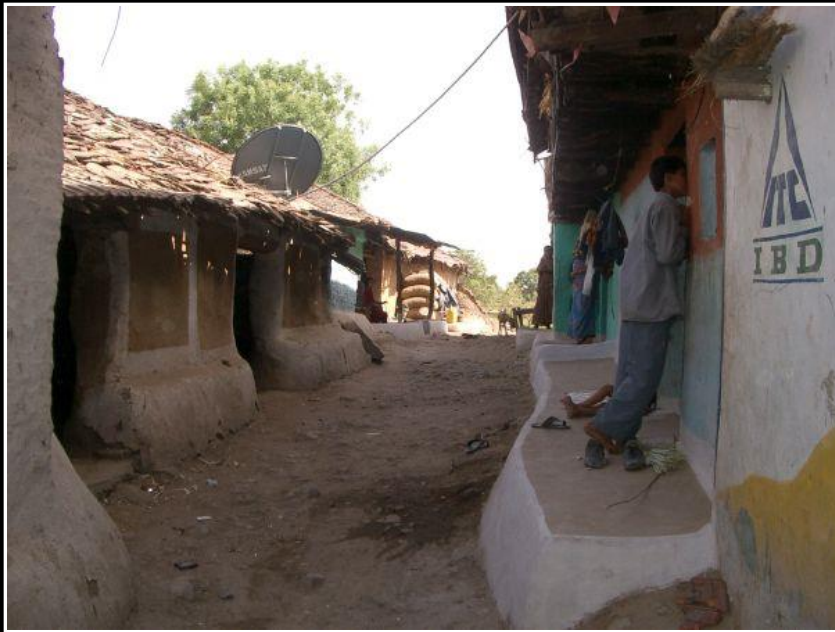
“The Internet  
democratizes access to  
information.”

“Social networking  
will transform  
learning”

“Each of us is  
simultaneously an  
individual person and  
a global publisher.”

“The Internet  
changes  
everything.”

# Why do these myths persist?



Desire for an easy solution

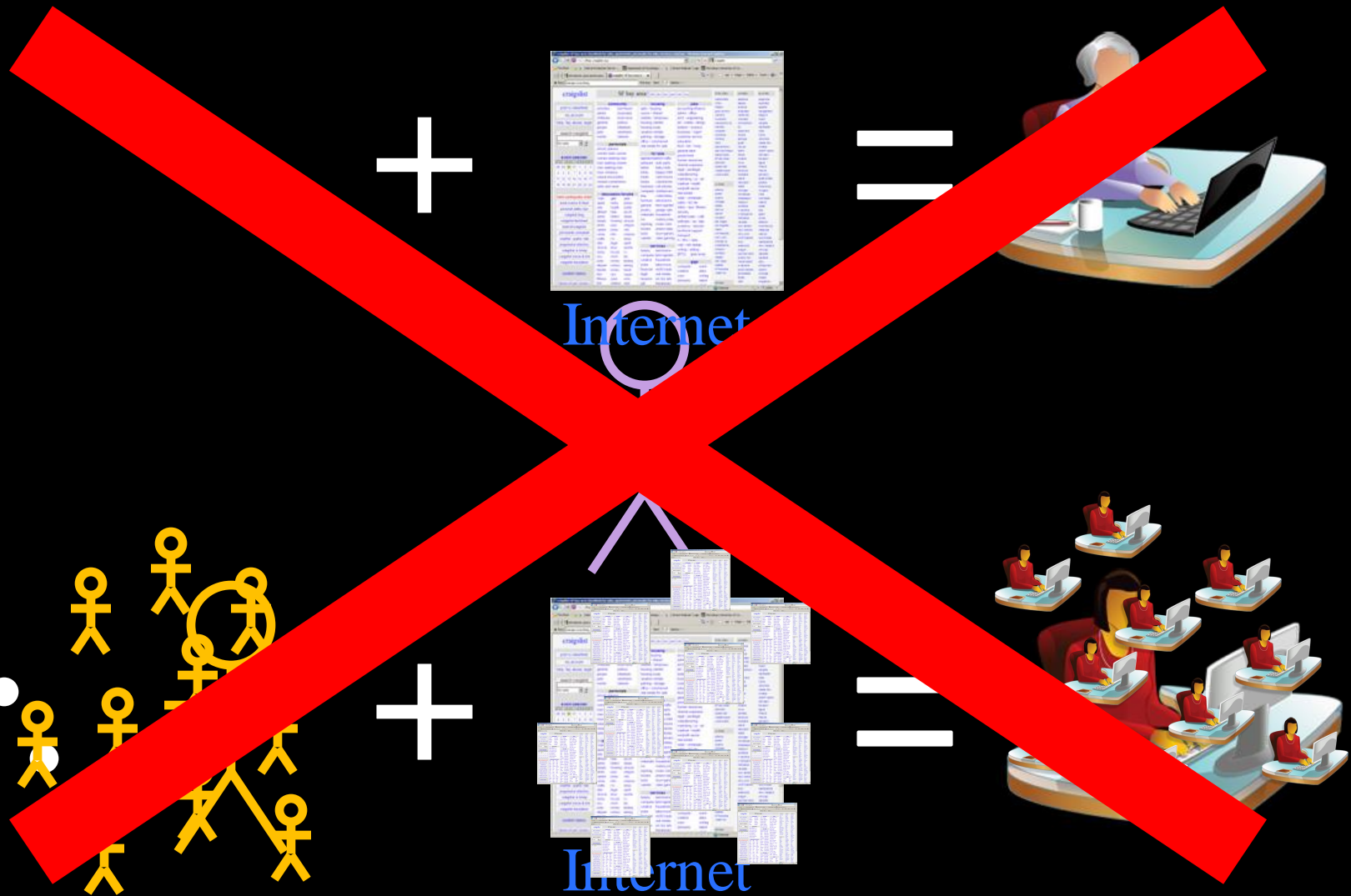
Desire for a one-time, catalytic investment

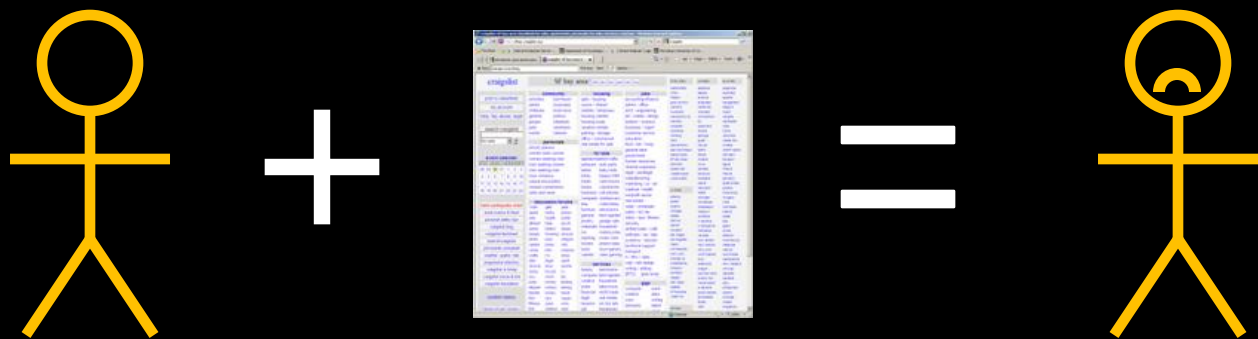
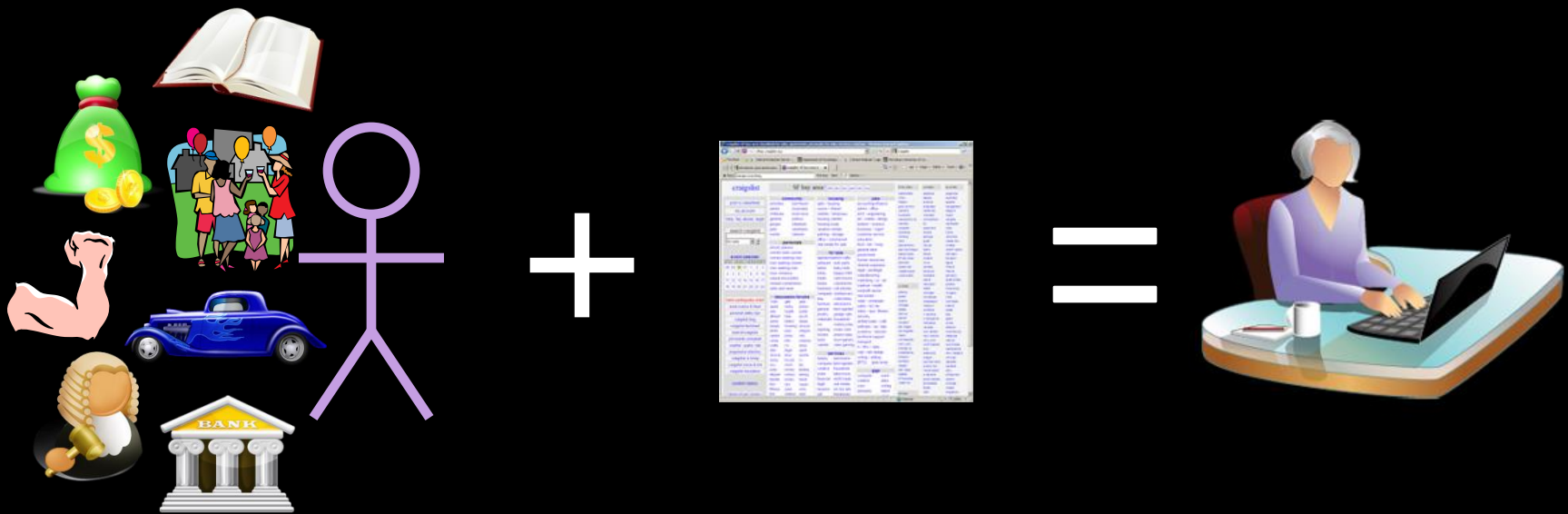
Desire to see ingenuity triumph

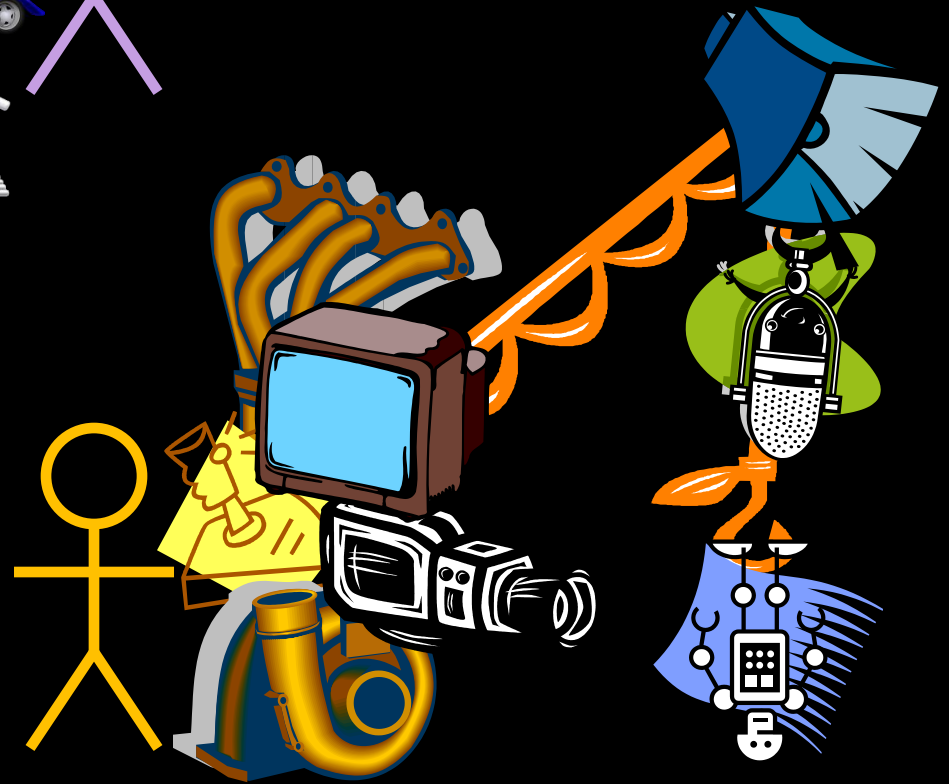
Seductive power of technology in the developed world

Not enough insight into actual poor communities

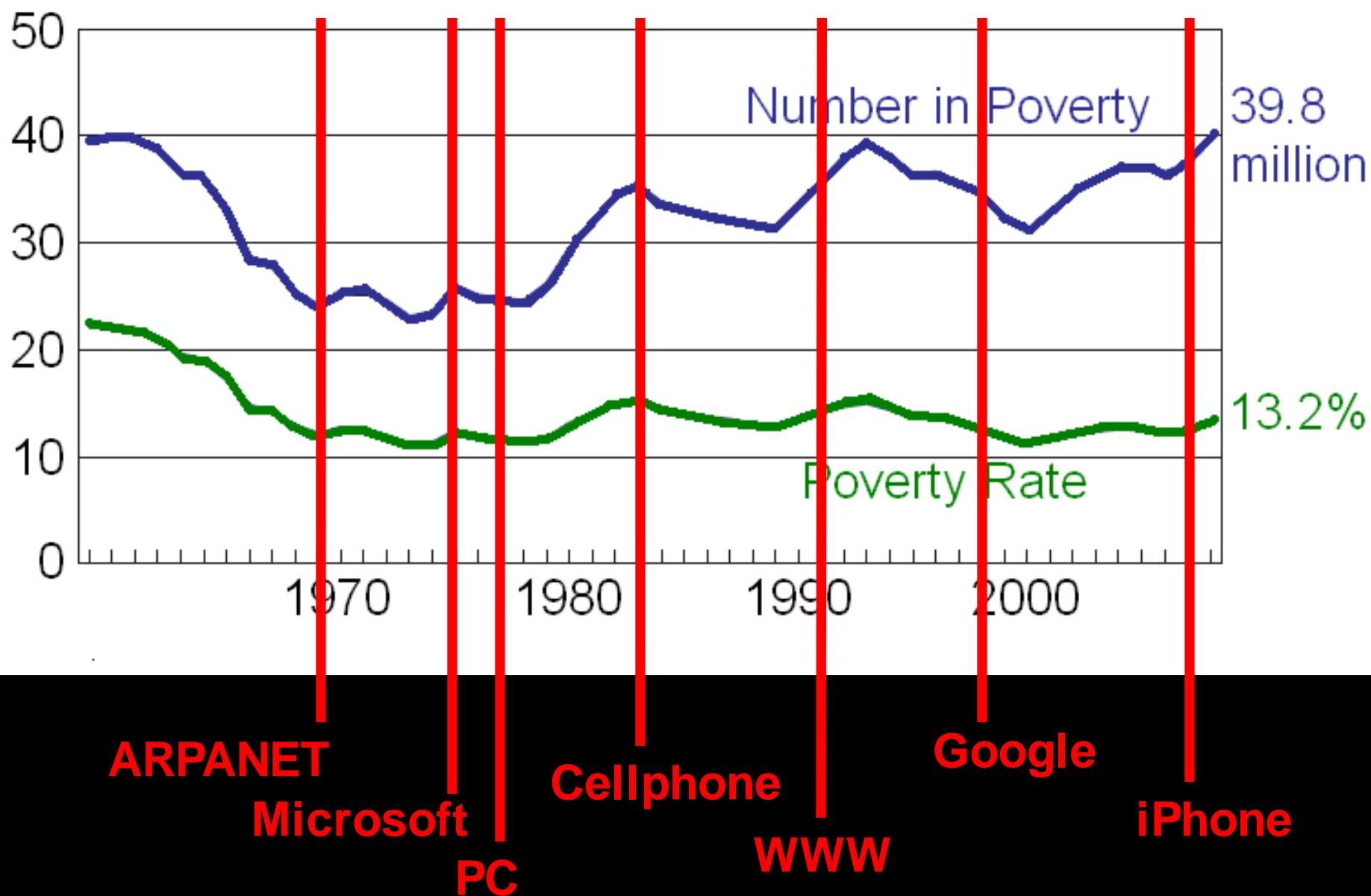
Misleading explanations of successful ICT4D projects – a variation of AI's “frame problem”







## Poverty in the United States (1959-2008)





# Summary

## Myths of ICT4D

- Technology X will save the world.
- Poor people have no alternatives.
- Needs are more pressing than desires.
- Needs translate to business models.
- If you build it, they will come.
- ICT undoes “rich getting richer.”
- Technology permits socio-economic leapfrogging.
- Hardware and software are a one-time cost.
- Automated is cheaper and better.
- Information is the bottleneck.

## Key Lesson

- Technology is a magnifier of human will, competence, and institutions.



Thanks!

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