

## Background: myths, principles, promises, and challenges

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When the only tool you have  
is a hammer, you tend to see  
every problem as a nail.

-- *Abraham Maslow*

### Myth: getting price on the net

- Myth
  - Where to sell, when to sell, extract fair prices from middlemen
- Reality
  - Depends on many other factors: transport, number of available middlemen, whether goods are perishable, storage capacity, need for cash
  - Many farmers get decent price info over old technologies already
  - The question: cost/benefit analysis

### Myth: newer is better

- Myth
  - Always need real time interactivity
- Reality
  - Radio, television, print materials have important roles even in richest countries
- Novel ways of combining new and old technologies
  - Kothmale (Sri Lanka): Internet over radio
  - Us: combine the net and TV (not WebTV)
  - Us: Internet over the postal system

# Myth: selling indigenous crafts

[www.PEOPLink.org](http://www.PEOPLink.org)

Non-profit marketplace enabling you to purchase directly from artisans all over the world.

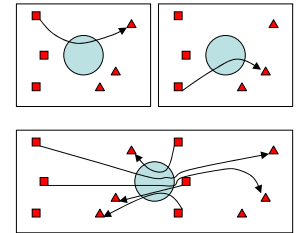


Click on the map above to browse Artisans by Continent.



# Myth: selling indigenous crafts

- Promise
  - Global market for crafts
  - Aggregate supply and demand
- Reality
  - Success limited in scale
  - Difficult: shipping goods and payment exchange
  - Global market for crafts is small
  - Not enough profit to be sustainable business models



## But you could do even worse...

- See every problem as a nail
- Worse: just build the hammer and declare victory...

## Outline

- Myths
- Guiding principles
- Promises and caveats
- Broader challenges

Poor people need medicine  
and not computers.

-- *Bill Gates*

## Key Message

- Infrastructure is useless by itself
  - Infrastructure: devices, connectivity...
- Need to solve real problems
  - Need to concentrate on applications
  - Software is the key (so is content)
  - The software we need largely does not exist
  - Invest in software
- “Build it (infrastructure) and they will come?”
  - No, we have to do it (applications) ourselves!
    - With collaborators

## Poverty has many causes

- Complex interdependent causes
- Unicausal approaches don't work

## Poverty has many causes

- Lack of material and financial resources
- Lack of opportunities of converting limited resources into income
- Lack of information
- Lack of communication opportunities
- Lack of access to education and knowledge
- Lack of access to capital

## Poverty has many causes (cont.)

- Lack voice and power in established institutions
- Poorly equipped to handle shocks
- Compounded at societal level
- Compounded at international level
- Effect of “poverty traps”

## Poverty has many causes

- Potential ICT component of each of these issues, but...
- ICT is no panacea

## Guiding principles

- Digital divide a symptom, not a diagnosis
- ICTs enable change; they do not create it
- ICTs only effective when linked with broader strategies
- Newer not always better
- ICTs need to be adapted to social contexts
- Need priority setting in allocating resources
- Absorb old lessons

## Strategic priorities

- Deeper analysis of ICT-dimensions of poverty
- Honest assessment of experience
- Strategic focus on levers of change
- More rigorous priority-setting
- Cooperation and information-sharing
- Support for pro-poor innovations
- Focus on MDGs, not ICTs
  - MDGs unlikely to be met

# Millennium Development Goals

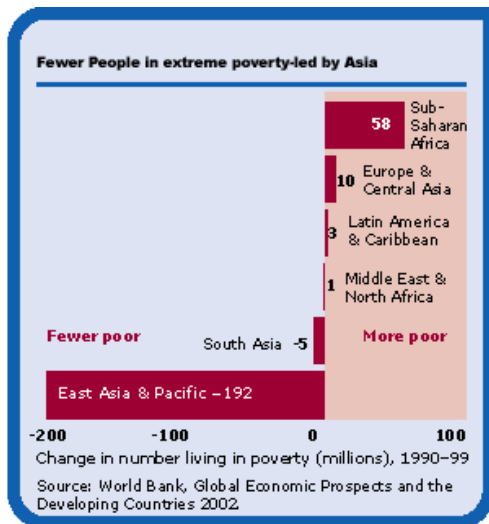
“We will spare no effort to free our fellow men, women, and children from the abject and dehumanizing conditions of extreme poverty, to which more than one billion of them are currently subjected.”

--United Nations Millennium declaration, September 2000

# MDG (cont.)

- Eradicate extreme poverty and hunger
- Achieve universal primary education
- Promote gender equality and empower women
- Reduce child mortality
- Improve maternal health
- Combat HIV/AIDS, malaria, and other diseases
- Ensure environmental sustainability
- Develop a global partnership for development

# Extreme Poverty and Hunger

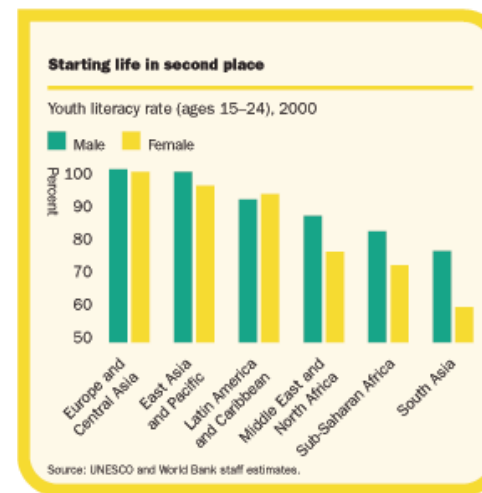


Halve the proportion of people living on less than one dollar per day in low and middle income economies, between 1990 and 2015 – from 29% to 14.5%

- In the 1990s, global poverty rates fell 20%, but growth was uneven

Source: MDG

# Universal Primary Education



Ensure that all children will be able to complete primary schooling, by 2015

- 2/3 of illiterates are female, 1/2 of all women in developing countries are illiterate
- MDG reset the earlier targets from 2000 to 2015

Source: MDG

## Outline

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## Education: potentials and caveats

- Crucial for opening up opportunities
  - More important in new sectors of economy
- Low government budgets
  - Largely pay teachers' salaries
  - No money for infrastructure, teacher training, books, curricular materials, school supplies
- Few teachers:
  - Poor quantity and poor quality
  - Acute lack of primary school teachers
- Parents can't afford to send kids to schools
  - Expenses
  - Need children to help with work
- Need to prioritize and do cost/benefit analysis

## Education: potentials and caveats (India: budget priorities)



a government school in Bhopal

## Education: potentials and caveats (India: budget priorities)



a government school in Patna

## Education: potentials and caveats

(India: budget priorities)

- Karnataka government schools
  - 79% no toilet facility
  - 49% no drinking water
  - < 10% has electricity
  - < 50% has play area
- Schools in Bihar, Madhya Pradesh, U.P., and Rajasthan
  - 63% has leaking roofs
  - 52% has no playground
  - 58% no drinking water
  - 89% no functioning toilet
  - 27% no blackboards
  - 2% has all the above
  - 8% has none of the above
- Question: how should we spend our resources?
  - Weigh ICT priority, and ICT cost, against ICT potential
  - Is the ICT solution going to be self-sustainable?

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## Education: potentials and caveats

(India: lack of teachers)

- Teacher vacancies unfilled
  - Bihar and Bengal state governments choose not to recruit teachers
- High rates of teacher absenteeism
  - Teachers often assigned other jobs
- Shortage of trained, motivated teachers
- Many fraudulent private schools

## Education: potentials and caveats

(India: lack of teachers)

- Question: what role can ICT play to address the teacher shortage?
  - Complement their limited expertise while harvesting their human intelligence
  - Maximize utilization of good teachers
  - Harvest global volunteer force (and open-source model)
  - Teacher training
  - Flexible time and location commitment to balance regional differences
  - Compete against quacks

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## Education: potentials and caveats

(India: financial burden on parents)

- Slogan: Education for All (Sarva Shiksha Abhiyan)
- Myth: public schools are free
  - Varies...
  - Karnataka---rural: Rs.800, urban: Rs.1200 per year
- Private schools
  - Varies but more expensive...
  - A Bihar case, A farmer's annual income: Rs.12000 (\$260), spends Rs.2200 (\$50), on one son
  - A case in the Dharavi slum of Bombay, an illiterate plumber: monthly income: Rs.3000, spends Rs.400 on one son, plus, Rs.200 on tutoring

## Education: potentials and caveats

(India: financial burden on parents)

- Question: can ICT help to lessen the financial burden?
  - More opportunities and more access (competition against quacks)
  - More efficiency and more specialization
  - Keep down material cost
  - Reduce needs for transportation
  - More flexible study times

## Education: potentials and caveats

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## Health care: potentials and caveats

- Potentials
  - Control spread of disease
  - Disseminate info on hygiene and healthy behavior
  - Improve capacity and effectiveness of health care providers
  - Broaden access to healthcare (remote diagnosis)
- Challenges
  - Lack affordable access to medicine and vaccines
  - Health problems tied to persistent poverty

## The environment: potentials and challenges

- Potentials
  - Sensing and networks: early warning system for emergencies
  - Monitor abuses
  - Disseminate good practices
- Challenges:
  - Problems rooted in persistent poverty
  - Need national consensus on sustainable growth

## Enhancing government: potentials and challenges

- Potentials
  - Make governments more efficient and accountable
    - “Dis-intermediate” via automation
  - Citizens better informed of their rights and services
  - Outlets for citizens to express their concerns
- Challenges:
  - ICTs do not create broader institutional reform

## Strengthening civil society: potentials and challenges

- Potentials
  - Multi-directional communication, debate, info-sharing, and collaboration
  - Sources of ideas and innovations
  - Check on governments
- Dangers
  - Rise of private media monopolies, global media conglomerates
  - Diversity of sources leads to reduction of trust
  - “Online mob”

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## Broad challenge: policies

- Liberalizing telecomm sectors
- Need legal and regulatory mechanisms
- Complementary public investments
- Support for business planning

## Broad challenge: ensuring access for all

- The poor spends disproportionately more on communication
- Challenges in rural and urban slums
  - Expensive to reach (not commercially viable)
- Approaches
  - Cross-subsidies
  - Taxes
  - Demand aggregation to lower cost
- Identify two categories:
  - Commercially viable targets: previous slide
  - “Beyond market:” this slide

## Broad challenge: social inclusion

- ICTs can deepen existing economic, political, and social inequalities
- Can deepen gender inequality

# Summary

- Infrastructure alone goes nowhere
- Focus on real-world problems, applications, software
- ICT has promises in improving education, health care, environment, government, civil society, but...
- ICT just a tool, and needs to be weighed against other ways of spending resources, and...
- Need broader and deeper solutions