



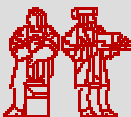
SP.772: Internet Technology in Local and Global Communities

# Lecture 5: IT/Entrepreneurship Development

March 27, 2005

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**MIT-AITI Vice President**

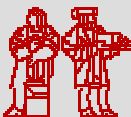


MIT-Africa Internet  
Technology Initiative ©2005

# Presentation Outline

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- The Purpose of this Lecture
- Challenges in Africa
- The Digital Divide
- Comparing AITI countries
- The Case Against IT Development
- The Case for IT Development
- The AITI Model
- Summary
- Q&A



# The Purpose of this Lecture

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- To understand some of the challenges facing Africa
- To understand the case for and against IT development
- To better understand the MIT-AITI model
- To help you think critically about what we do!!



# Challenges in Africa

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- Health

- Hunger
  - 1 in 3 people in are currently undernourished in Africa
  - 1/3 of all the world's undernourished people reside in sub-Saharan Africa
- Diseases
  - AIDS- 17 million have died. At least 25 million may follow.
  - TB, Marlaria..

- Freedom/Government

- 77% of countries in Sub-Saharan Africa are either only "Partly Free" or "Not Free"

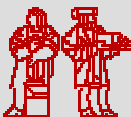
- Economy

- GDP per capita (PPP US\$)

● Sub-Saharan Africa	1,831
● United states	34,320

- Education

- 98 percent of all non-literates live in developing countries
- Africa as a continent has a literacy rate of less than 60 percent.
- In Sub-Saharan Africa since 1980, primary school enrollment has declined, going from 58 percent to 50 percent

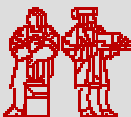


# The Digital Divide

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Oxford English Dictionary “digital divide” is defined as:

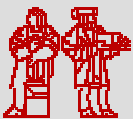
*“The gulf between those who have ready access to current digital technology and those who do not; the perceived social or educational inequality resulting from this.”*



# Digital Divide in Africa - Bad News I

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# Digital Divide in Africa - Bad News II

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## Internet Users as percentage of Total Population

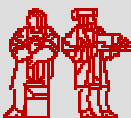
Region	1998	2000
United States	26.3	54.3
High-income OECD (excl.US)	6.9	28.2
Latin America and the Caribbean	0.8	3.2
East Asia and the Pacific	0.5	2.3
Eastern Europe and CIS	0.8	3.9
Arab States	0.2	0.6
Sub-Saharan Africa	0.1	0.4
South Asia	0.04	0.4
World	2.4	6.7

Source: NUA Publishing ([www.nua.ie](http://www.nua.ie))

## Personal Computers per 1,000 people

United States	658.9 personal computers per 1,000 people
Sub-Saharan Africa	11.9 personal computers per 1,000 people

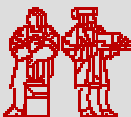
World Bank (<http://devdata.worldbank.org>), in 2002



# Digital Divide in Africa - Good News

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- **The gap is closing**
  - Internet connectivity
    - 5 years ago, handful of African Capitals had internet connectivity
    - Today every African capital has internet connectivity
  - The gap between developed and undeveloped countries is closing especially rapidly in the deployment of new technologies that do not rely on older technologies
    - Mobile Phones



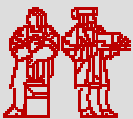
# Mobile Phones

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## Leaping ahead

Trends in total teledensity, in sub-Saharan Africa, 1992-2002

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# Comparing AITI countries

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	GNI per capita (Atlas method, \$)	Poverty (% of population below \$1 a day)	Personal computers per 1,00 people	Internet Users (thousands)	Service Provider charge(\$)	Radio per 1,000 people	Televisions per 1,000 people
Ghana	270.0	44.8	3.3	40.5	36.0	710	118
Kenya	360.0	23.0	5.6	500.0	65.6	221	26
Ethiopia	100.0	89.1	1.1	25.0	94.0	189	6



# The Case Against IT Development I

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- Much more important issues
- Just the current fad in development
  - Like the idea of subsidies and agriculture
- Digital Divide is just a symptom of bigger problems. To fix this problem we must first:
  - Have stable governments that can promote investment
  - Reduce debts
  - Have stable currencies and markets
  - Improving the countries' basic infrastructure



# The Case Against IT Development II

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- Even if all of these conditions are met, it is not clear that the best market for developing countries would be the ICT market, because:
  - Technically skilled people needed to maintain the ICT infrastructure are hard to educate, and subsequently, hard to retain.
  - Developing countries will have to accept the ICT and e-commerce standards set by the developed nations, which will make it very hard for them to compete



# The Case Against IT Development III

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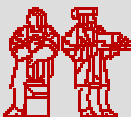
- Does the average African really need technology?
  - 35.1 percent of the illiterate in sub-Saharan Africa
  - Average African makes \$2 a day
- Africa doesn't have the basic infrastructure for ITC
  - Electricity
  - Phone lines



# The Case for IT Development

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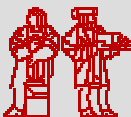
- The case for IT development can be divided into two ideas
  - IT development will lead to an IT industry or progress other related industries, which will enable developing countries to take part in the digital revolution, and
  - IT is a very effective tool that can be used for multiple goals, such as improving education, improving government, and giving citizens better access to information.



# Development of an IT Industry

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- Developing world is missing the “Digital revolution” and it will be hard to catch up
- IT will lead to better market globalization and will
  - Enable outsourcing
  - Enable direct links between customers in other countries and Africa
  - Increase presence of small industries like small craft and tourism



# IT as a Tool

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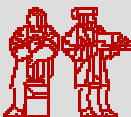
- Education
  - Access to information
  - Long distance learning
- Transparency in government
  - Have government information online
- Better information
  - Makes information local available to more people



# The AITI Model

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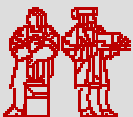
- We believe in:
  - Education
  - Creating an economy
- How:
  - Student to Student teaching model
    - Low cost – high impact
    - Use the recourses at MIT
  - Summer program
    - Integrate computers and Internet technology into the education of students in African schools
    - Teach real IT (programming)
    - Since no IT industry exists, also give tools to start industry- **Entrepreneurship**



# The AITI Model

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- More
  - Self learning/OCW
    - No qualified teachers in the near futures
    - If students can learn how to learn on there own, then they can use books/IT to lean anything
  - Teach teachers
  - Satellite program



# Summary

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- Africa has a lot of needs
- MIT-AITI needs to continue questioning what we do and try to improve
- MIT-AITI has its own unique model for IT development that comes hand in hand with Entrepreneurship
- From surveys it seems that our model works very well – but we need more data



# Q&A

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Thank you

Please ask questions.....

