Wireless Training: the ICTP Experience

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About the ICTP

(the Abdus Salam International Centre for Theoretical Physics)

founded in 1964 by Abdus Salam (Nobel Prize in Physics)

it operates under a tripartite agreement: UNESCO, IAEA and Italian Government

About the ICTP
(the Abdus Salam International Centre for Theoretical Physics)

~5,000 scientists each year

>100,000 since the inception

from 170 nations and 40 international organizations

50% from Developing Countries

About the ICTP (the Abdus Salam International Centre for Theoretical Physics)

>50 schools, workshops and conferences each year

Associateship, Diplomas, Support to many federated institutions,TRIL, OEA

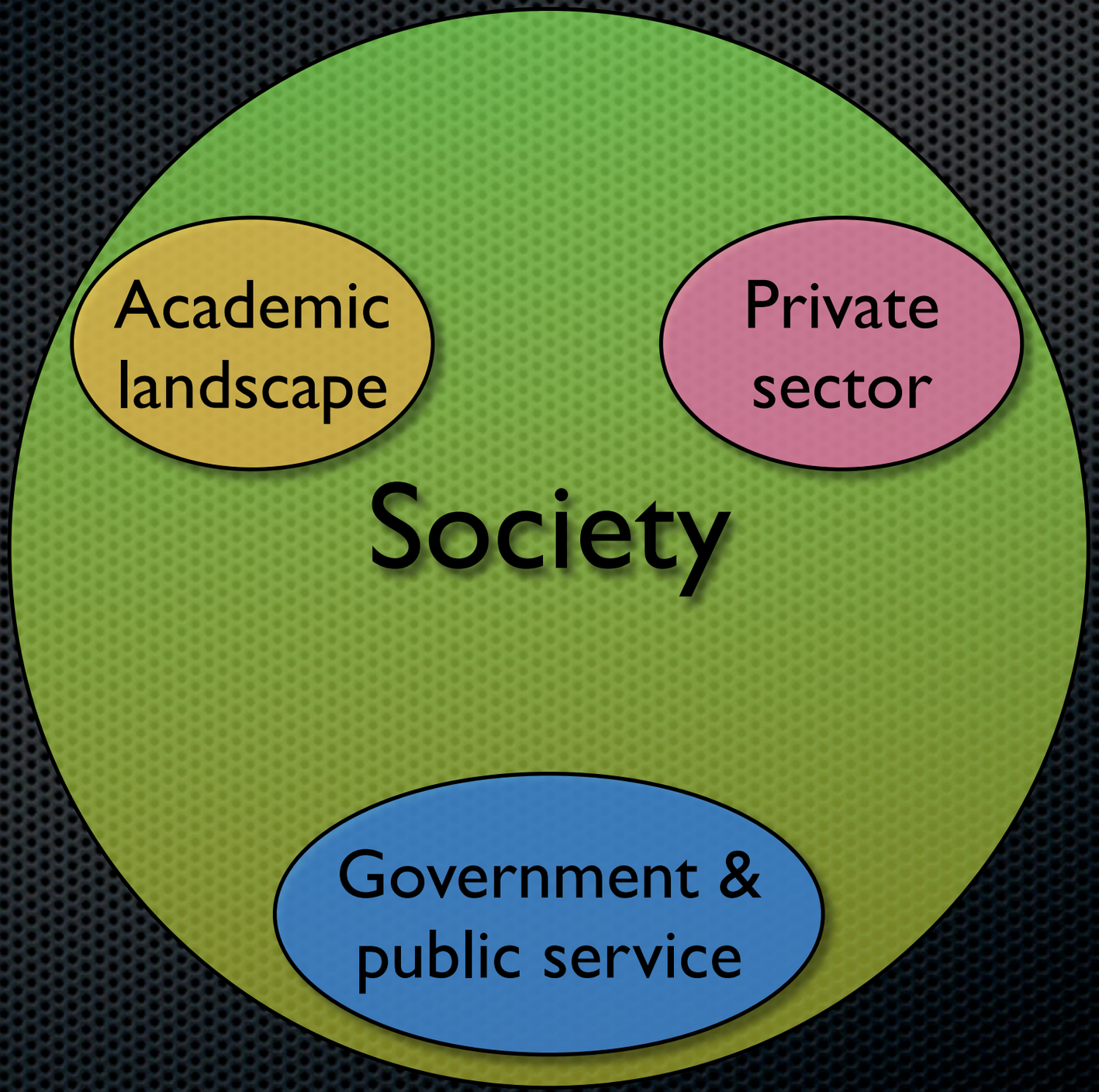
Why ICT at ICTP?

Key technologies

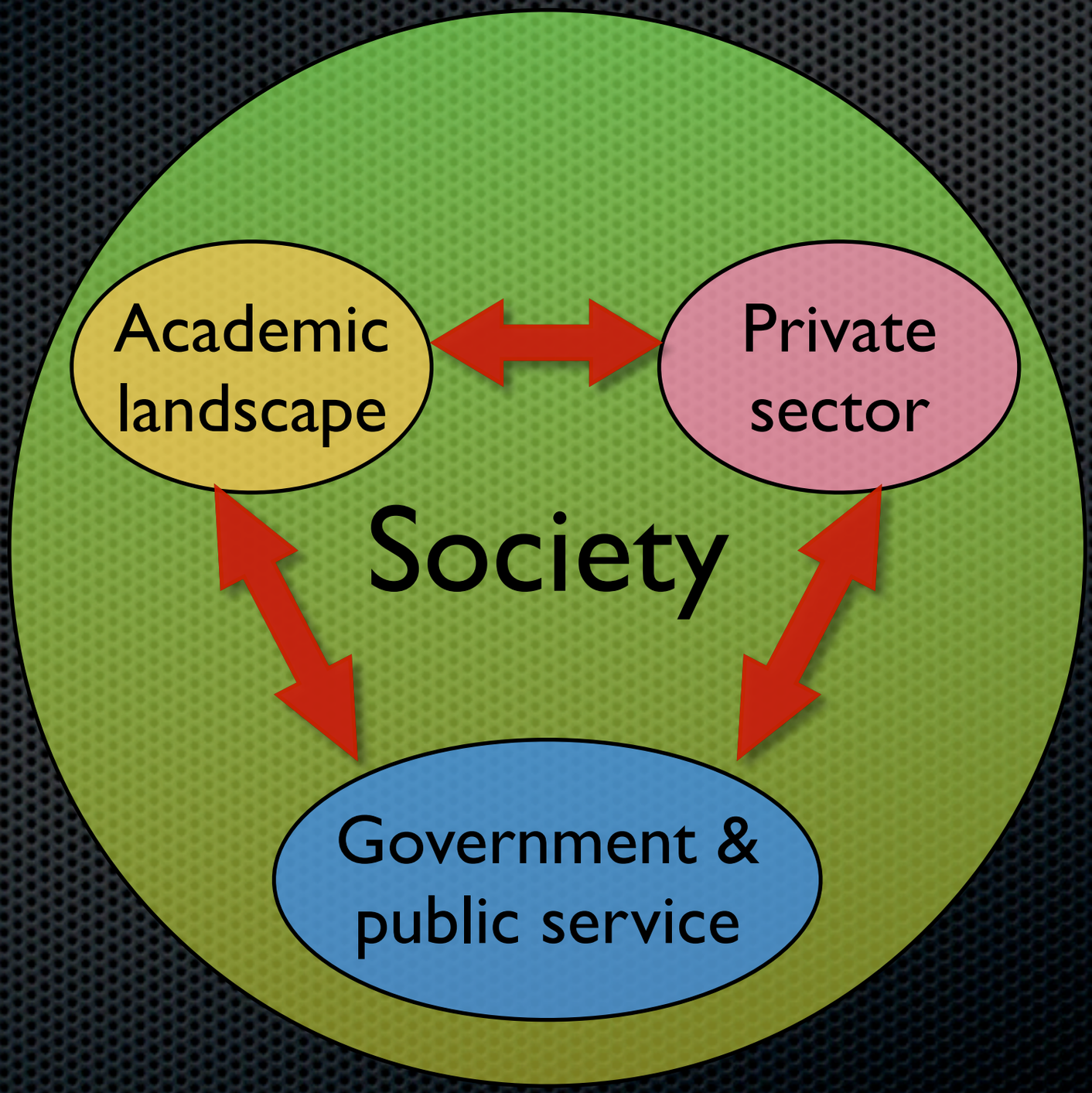
- Internet as a cost-effective channel for the dissemination of information, knowledge and services is a paramount in our days.
- Broadband Internet access can contribute to economic and social advancement and is being increasingly recognized as a policy objective in most countries.
- Key technologies are:
  - wireless broadband
  - wireless sensors networks

- The growth of ICT poses the challenge of helping developing countries to avoid of being cut out from its benefits.
- "History has witnessed many ‘declarations of independence’. But in today’s interconnected world we might propose a new ‘Declaration of Inter-dependence’ – a recognition that the economic welfare of each individual country increasingly depends on access to the rest of the world through broadband Internet," said recently the ITU Secretary-General Dr. Hamadoun Touré

But, what is the typical situation in a developing country ?

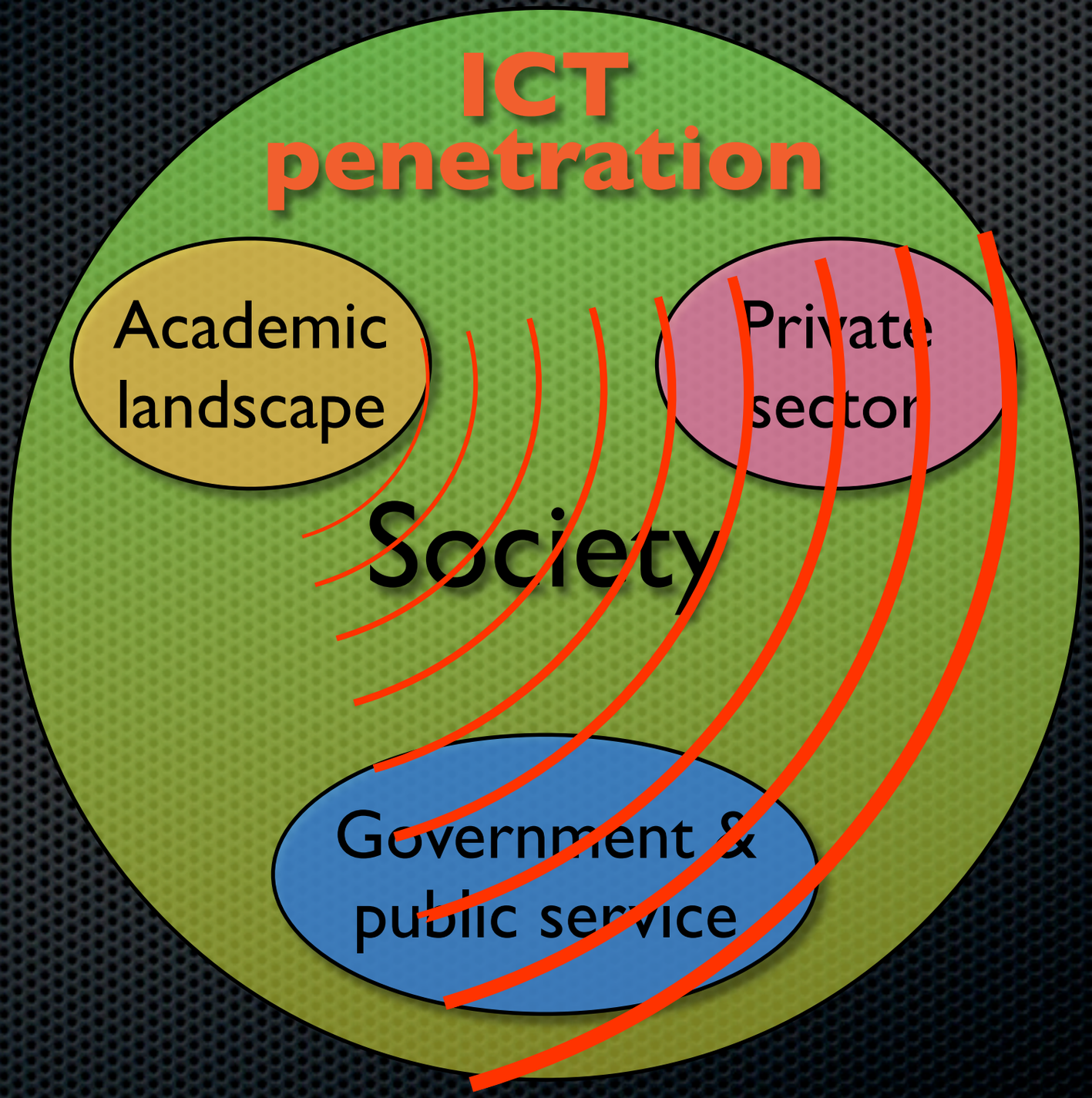


And the the ideal status?



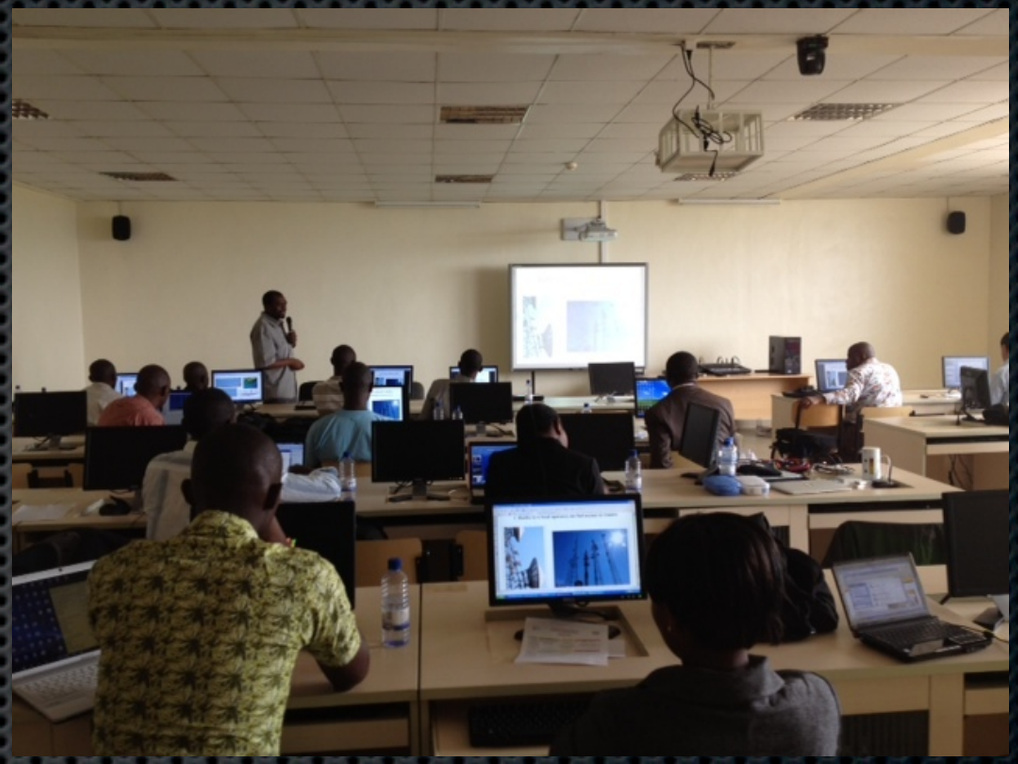
A way towards it

The academic landscape is the obvious starting point: from there ICT will permeate to the rest of society.



ICTP and ITU

- As an answer to the problem the ICTP is closely collaborating with the ITU to train experts, mostly from the academic landscape of developing countries.
- A recent example is the project "Strengthening Training Capacity in Wireless Networking in Africa" financed by ITU/BDT and executed by ICTP.
- Another example is given by the fact that ICTP became last year Sector Member of ITU/BDT.



What we do at the T/ICT4D

- Try to be a Wireless Technology Observatory
- Do research and practical experimentation
- TRAIN THE TRAINERS

How we got there?

Training at ICTP in radiocommunications and ICT

- 1800 young scientists and technical staff trained since 1989
- Over 50 courses held at ICTP, Trieste and abroad (average: about 2.5 weeks, average about 40 participants)
- about 100 visitors: young researchers, post-doc

From theoretical training to technology observatory and hands-on training

TRAIN THE TRAINERS (TRAINING KITS)

⇧

The need to link the choice of cost-effective tech with training

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The question: What technology?

⇧

Courses on wireless technology for networking with emphasis on hands-on training

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Theoretical courses on application-oriented topics

⇧

Theoretical courses on radiopropagation

Method: “train the trainers”

We got it after an experience of more than 10 years

The Wireless Training Kit

Materials for training tomorrow's wireless trainers

- **Includes all equipment and materials needed to hold a wireless training workshop**
- **Books, access points, training materials, spectrum analyzer, and other gear are configured and ready-to-present**
- **Ensures compatibility and consistency in teaching methods**

Reference material

- Training materials for students: slides, lab activities, and exercises
- Training materials for teachers: video lecture examples and teacher's guide
- Copies of the books Wireless Networking in the Developing World and How to Accelerate Your Internet
- Books are available in English, Spanish, French, Portuguese, Arabic, and Indonesian

Our First succes story
Nigeria: from Ile-Ife to NITDA


Abuja, Nigeria, jun 2003

- **Since 1995**: long training at ICTP, Trieste for NUC (Nigerian Universities Commission).
- 1995–2003: many **local training activities** in ICT at Ile-Ife and other Universities in Nigeria.
- 2002: **NITDA** (National IT Development Agency) is established in Abuja, also thanks to the many efforts of the ICTP in Nigeria.

- First director was prof. **G.O. Ajayi**.

The outcome of a project

- Before 1996, no digital connection at Obafemi Awolowo University, Ile-Ife, (OAUIFE), Nigeria.
- The intervention of the International Centre for Theoretical Physics (ICTP) in 1996 brought about the ICTP/OAUIFE Computer network, by dial-up, with 3 subnets.
- In 1999, OAUIFE acquired a VSAT symmetric connection with a 19.2 kbps, with 8 subnets in the Campus.
- In the year 2001, the bandwidth was increased to 64kbps uplink and 128kbps downlink, asymmetric connection.
- In 2002, 7 new subnets added with 128kbps uplink, 512kbps downlink and many Cybercafes.

The world we dream

THANK YOU

FOR YOUR ATTENTION