

# Science - Technology - Innovation

December 17, 1903



Grow  
applicability



Grow  
reliability

Optimize  
components



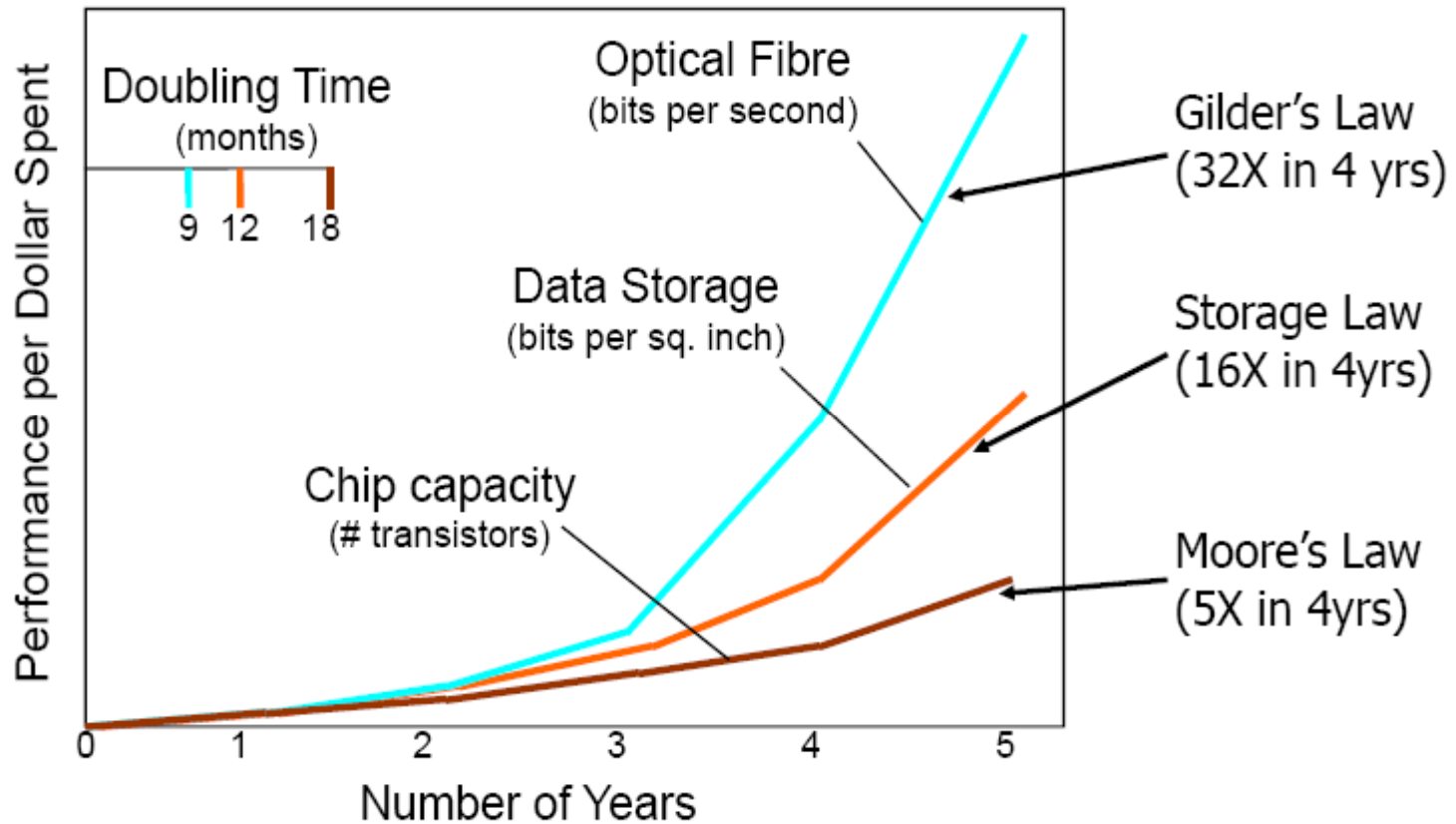
Fly in 2005?



We shall do it faster if we use the  
knowledge of the world!

# Example: Technologies' watch

## Exponential Growth



Triumph of Light – *Scientific American*. George Stix, January 2001



Preliminary summary of the findings and  
conclusions of the "e-libraries' school" at  
KIST 4 21-25 Sep. 2009  
organised by CERN, UNESCO, KIST, ...

Scientific Knowledge is a common good (in the end)

The value of knowledge increases with its use

"Open Access" to publications is the recognised best  
practice of publicly financed sciences in the world

"Common use" copyrights are another best practice

# Results from "e-libraries' school" at KIST / Rwanda (1<sup>st</sup> slide)

Collect all peer reviewed or otherwise accepted scientific outputs of all research institutes and universities in Rwanda and **mandate** such institutions to make them openly available on the internet in Rwanda and globally (Open Access)

Give these works the appropriate copyright statements (often "Creative Commons" copyrights are convenient and sufficient)

Use, to begin with, the "Academic Repository of Rwanda", the new common prototype provided by and now put into service at KIST 4



## Results from "e-libraries' school" at KIST / Rwanda (2<sup>nd</sup> slide)

Go only to further institutional repositories when you are ready in your University and you have the additional resources beyond what you need to use and exploit "ARR". "ARR" will then harvest your works into the central server according to national interest.

Start now with all upcoming Master theses leading to a Master's degree. Define your University's policy of publication of scientific and other works and make such works available accordingly in the repository

Define in your Universities the needs of external "Knowledge", i.e. documents, other content of interest available on the internet, collect it or ask for it to be sent to you as DVD, . . . . , for use in this country

## Requirements from the "e-libraries' school" at KIST / Rwanda (3<sup>rd</sup> slide)

Librarians in Rwanda have common tasks and common problems. Those present to the "school" appreciated the great interest of the discussions they had at the school amongst themselves and particularly with the IT persons providing the libraries' IT services

All librarians of Rwanda and the corresponding IT persons should be encouraged and helped to meet regularly to discuss libraries' best practices, mutual assistance, exchange of ideas, formulation of their needs, according to the directives and requirements of their universities and of the Ministry of Education of the Republic of Rwanda

# Collaboration, the key message

Collaboration must be

strong among all the libraries that will run and populate the repository ARR that we now are about to set up

with faculty so that we get their working papers/ manuscripts/ reports/ teaching lessons and the theses of their students

to establish links abroad; we should for example pack and send all our academic training lectures , European and other universities can provide "course ware"

# Results from the Butare /IRST courses on modern physics teaching (CERN with help of UNESCO)

Educational content and most urgently content for modern science education is of utmost importance, to be available from "ARR"

Those present acknowledged the importance of discussing and working together and liked the first experience.

Universities teachers, educating science teachers, and science teachers should be encouraged and helped to hold regular meetings to discuss common experiences, problems, best practices, mutual assistance and formulation of their needs, according to the directives and requirements of their universities and of the Ministry of Education of the Republic of Rwanda



# Butare IRST continued

Science teachers need to follow courses of modern science teaching regularly.

To do this **videoconferencing over IP** is of utmost importance for them.

The slide on collaboration above applies equally to the teachers and the faculty forming teachers, in Rwanda and elsewhere

# Requirements from the "e-libraries' school" at KIST / Rwanda and IRST Butare

The Academic Repository of Rwanda needs skilled persons to make it useful, in terms of ITC support and librarian support

Rwanda universities and schools should promote the creation of a "National Research and Education Networking" organisation to assure their necessary connectivity and service

To make the ARR a success tutoring, assistance and collaboration with regional or other libraries (CERN) will be highly important. This can be conveniently supported by **videoconferencing over IP**

# Next steps

A draft report will be written in the next weeks and sent to all participants, the management of the involved institutions and other interested instances.

It will contain recommendations and necessary actions

Comments will be incorporated as possible

A limited number of training occasion are offered by UNESCO and other places and should be proposed to appropriate person

# Many thanks to:

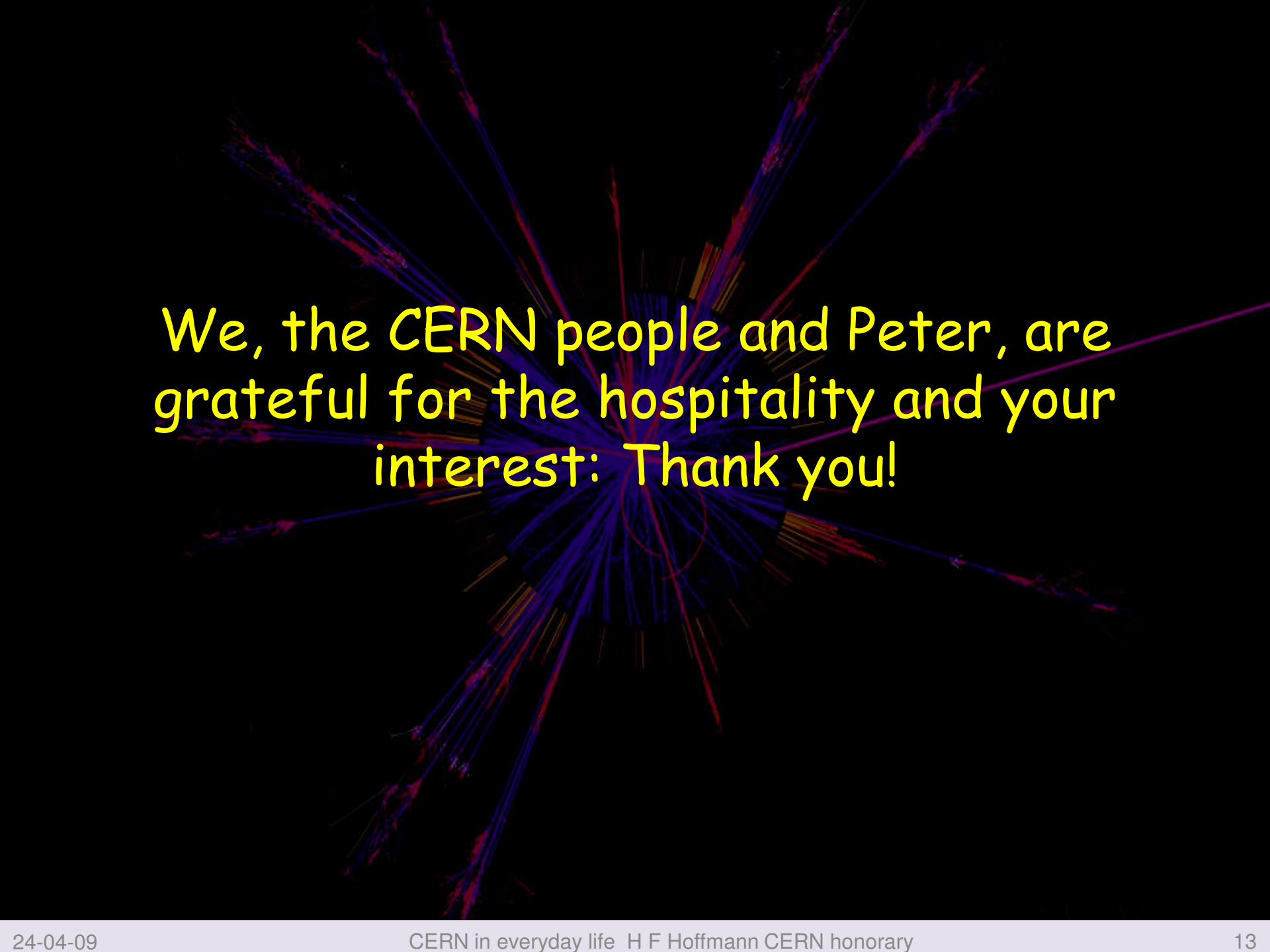
UNESCO IBSP and CERN as institution

Participating institutions of RWANDA

The help and contributions of the observers from  
Cameroun, Ghana and Mozambique

The active participation of you all

KIST (4) and IRST for providing services, premises,  
help, a server, . . . .



We, the CERN people and Peter, are grateful for the hospitality and your interest: Thank you!