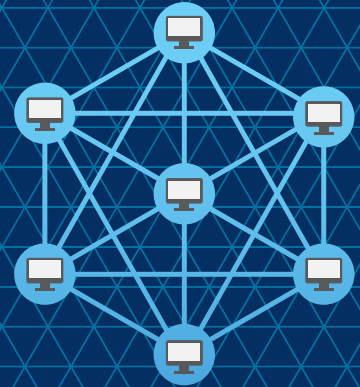# FIBRE AND THE

FUTURE INTERNET

The Internet is quite old. It was created in the 60's, being older than the Walkman and the videocassette! Have you thought about that?

The e-mail is one of the first applications over Internet. The first e-mail was sent in 1969!

The current Internet architecture, designed about 40 years ago, has undergone many extensions and patches to include new features over the years.

For example, video streams and online banking applications were not foreseen when the Internet was invented.
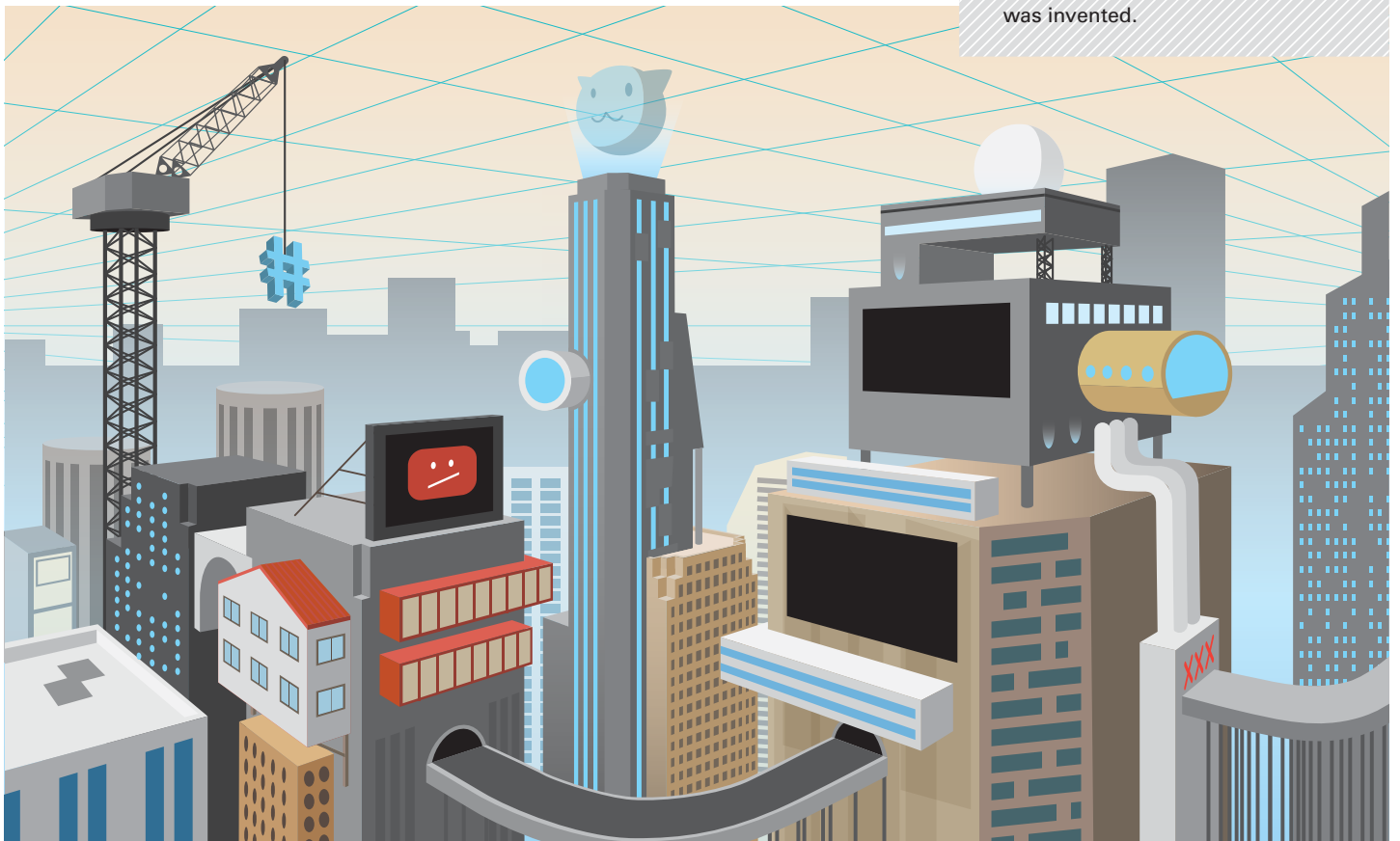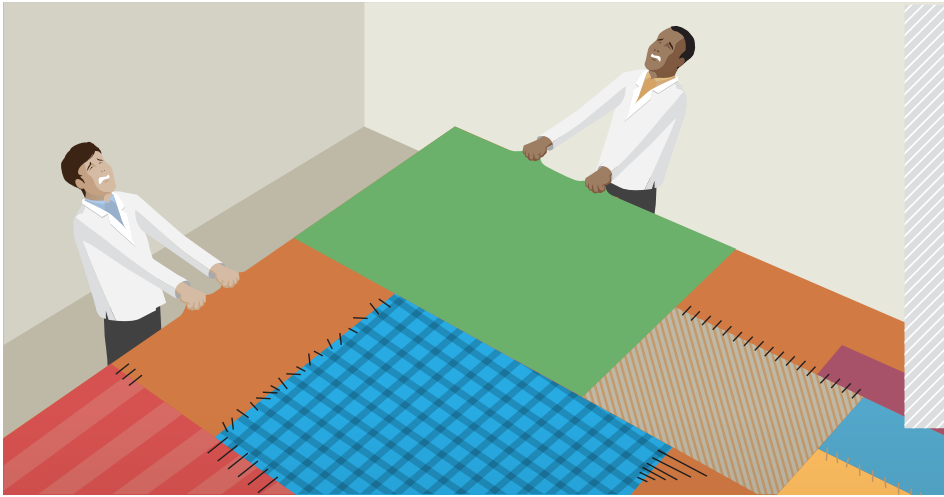
The inclusion of new functionalities, which had not been anticipated in the initial design, is transforming the Internet architecture in a sort of "patchwork".

In every adaptation, the degree of complexity of the resulting architecture increases, preventing the continuous development of the Internet.
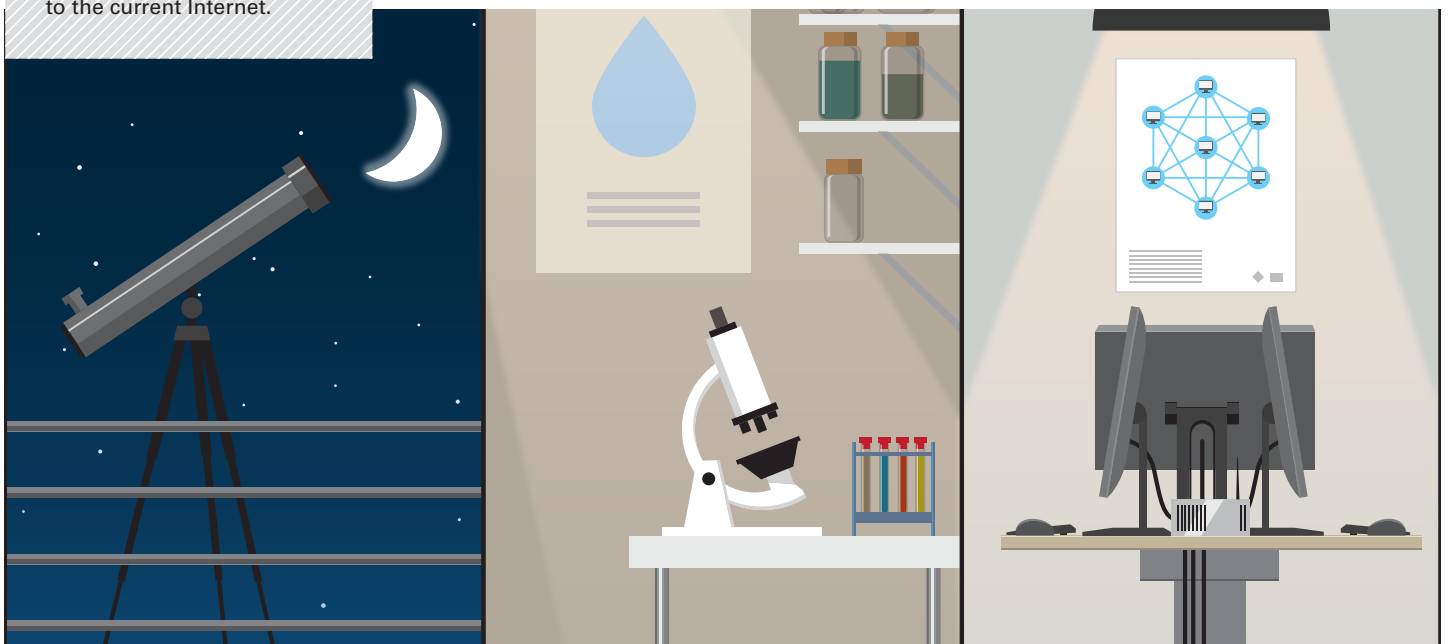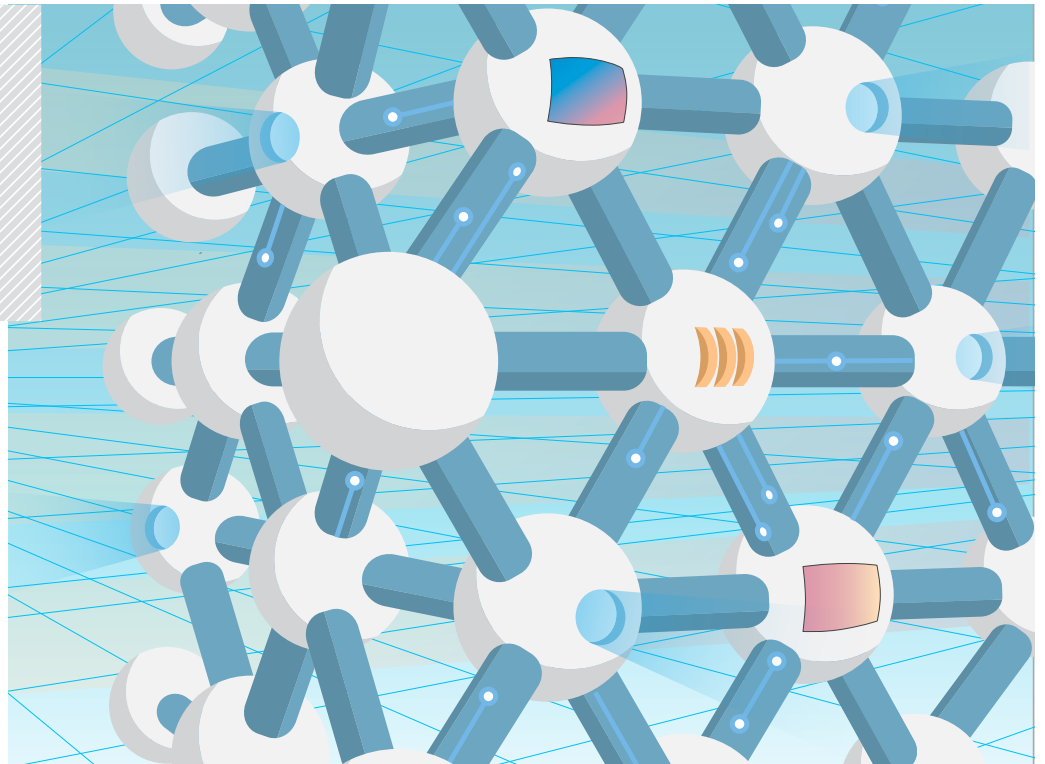
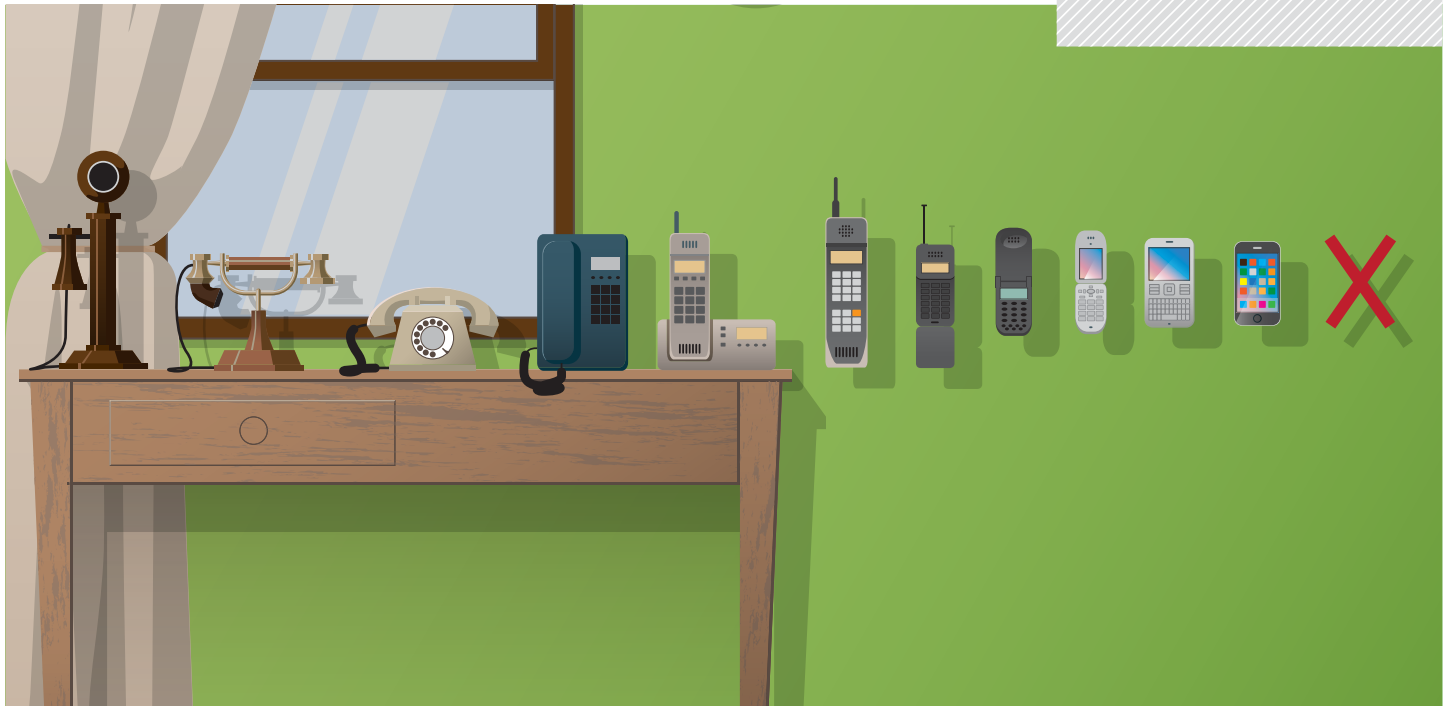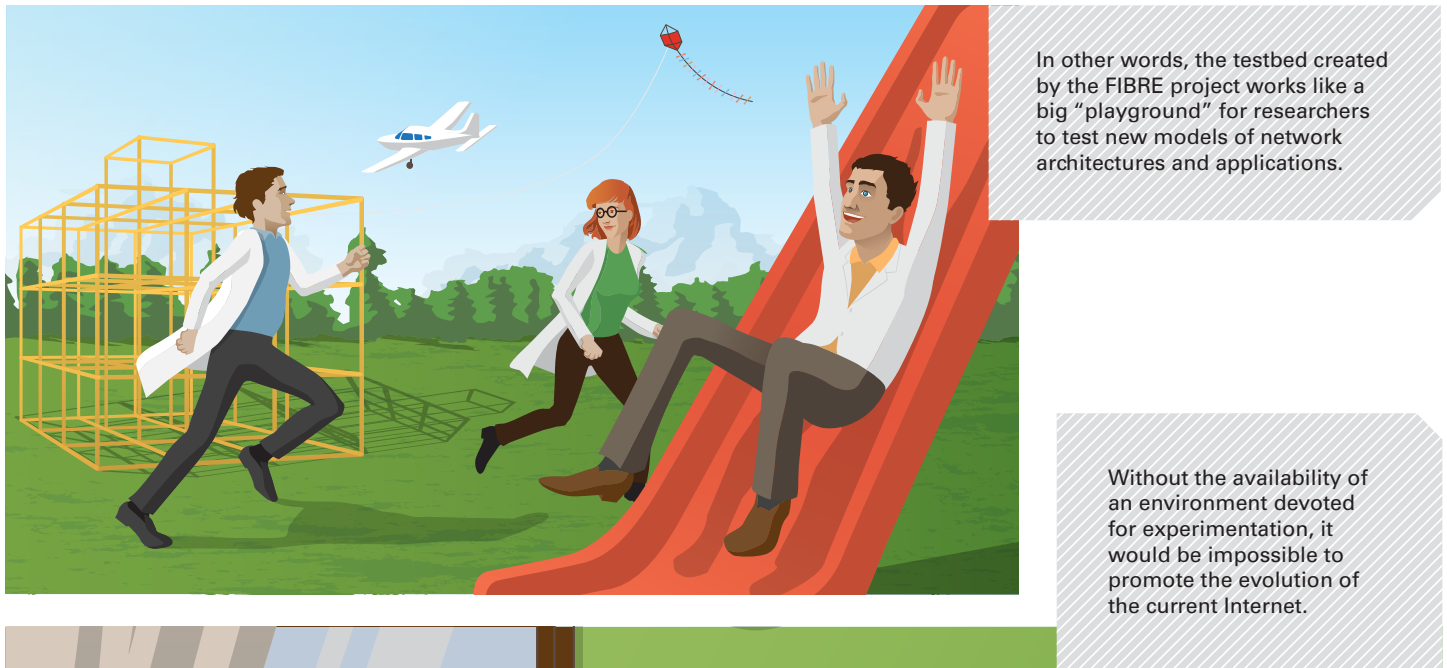It's a common jargon to say that the Internet has become "ossified".

Certainly, if the Internet was reinvented today, its design would be different.

Overcoming limitations of today's Internet in order to make it more efficient and secure requires changing this architecture through the design called Future Internet

But how researchers can test and validate new architectures without disturbing the operation of the current Internet?

Just like astronomers use telescopes and biologists use microscopes, "Future Internet cientists" use testbeds as their instruments. Testbeds are networks devoted for experimentation, connected to the current Internet.

BRAZIL

UFPA

UFPE

UNIFACS

RNP

UFG

UFSCar

CPqD

USP

UFF

UFRJ

EUROPE

U.Bristol

UTH

I2CAT

... and that's the goal of the FIBRE project: to build a large Future Internet testbed in Brazil, integrated with other existing ones in Europe.

In other words, the testbed created by the FIBRE project works like a big "playground" for researchers to test new models of network architectures and applications.

Without the availability of an environment devoted for experimentation, it would be impossible to promote the evolution of the current Internet.
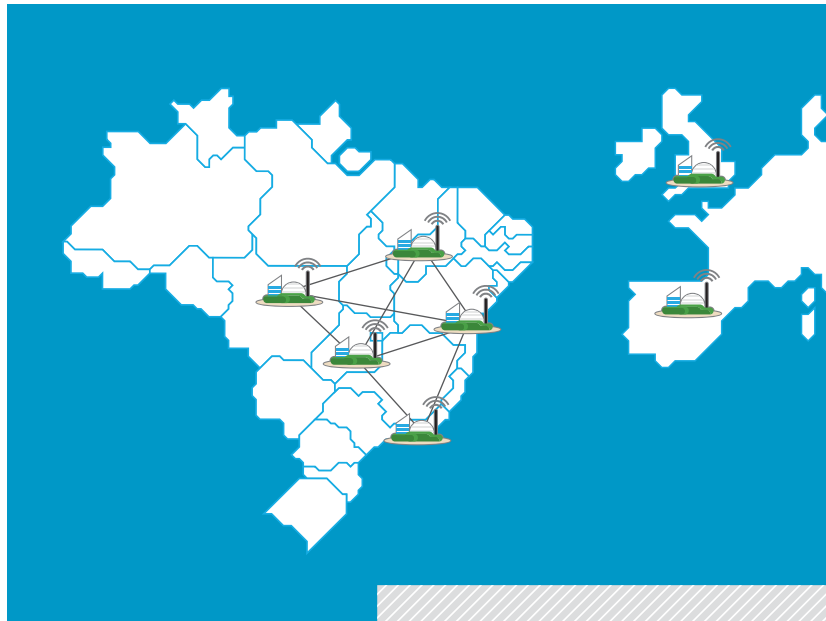
Universities, research centres and even companies participate in the FIBRE project.

Many of these institutions host the so called "experimental islands", which are like small-local testbeds.

... In practice, the FIBRE testbed is a federation of several experimental islands.

This way, each institution has autonomy over their own local resources, while using resources from other islands to setup experiments over long distance networks.
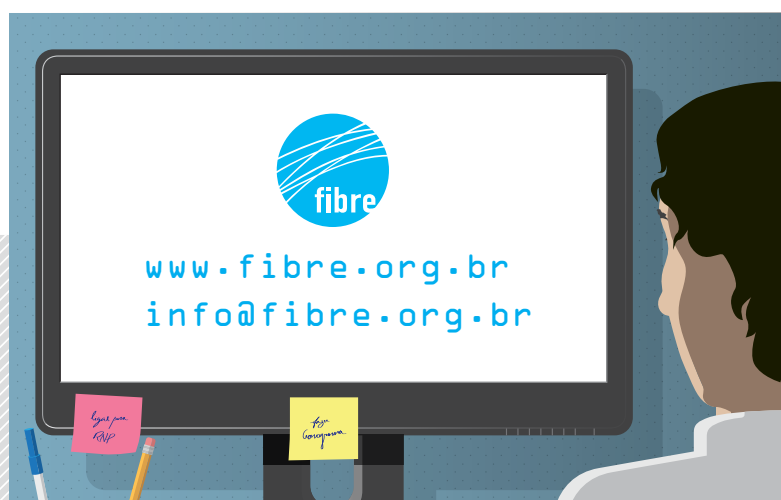
... Professors are also welcome to use the FIBRE testbed for hands-on classes in computer networks.

Using a large-scale facility instead of local network emulators will help to train the next generation of researchers.

Visit the FIBRE website for further information and get prepared for running Future Internet experiments on FIBRE Testbed.

If you are a professor, we are please to assist you and share teaching practices

fibre

www.fibre.org.br
info@fibre.org.br

RNP

CNPq
Conselho Nacional de Desenvolvimento
Científico e Tecnológico

Co-funded by the
European Union