



RESEARCH2REALITY

Shining a light on research & innovation.

Bringing the Internet Back From the Brink

| An interview with Professor Catherine Rosenberg
| Internet Engineer, University of Waterloo

What challenges do we face with the internet?

The internet is really like a living organism. It keeps on evolving and we need to understand how to help it evolve in the right way.

What is the difference between internet applications and infrastructure?

If you think about the internet, you can think of it as two different worlds: the world of applications and the world of the infrastructure. And the application goes very fast. New applications are created and they become popular very quickly and it changes the traffic, it increases the traffic. The infrastructure, as you can imagine, is going to evolve slower, first because it is very costly and because it has to adapt to new patterns. The problem is it's extremely costly to put infrastructure in rural areas. And because everything now is business-oriented – it's about making money out of the infrastructure – the operators, if they are not compelled to do it, would hesitate to invest a lot of money into wiring the rural areas.

What does the future hold?

You can think of the internet, in my view, as one of the best success stories in terms of engineering design, because in spite of everything, it has never collapsed. The designer of the internet, they were very clear that the internet had to be robust, to be able to adapt to the unknown. And this is really what has saved us so far. The internet is becoming more and more complex, and with complexity comes vulnerabilities, and this is the danger for the future if we are not careful.