
Innovation at Work - Alcatel-Lucent's WebTV Transcript edition 01/2010 - Green Touch

Hugh SCHOFIELD (voice over)

Our planet needs protection. If we are to continue spreading the benefits of prosperity and economic growth then it has to be hand in hand with a radical redesign of the way we create and consume energy. It's the challenge and the inspiration for our times.

Hugh SCHOFIELD

Hello and welcome to Innovation at Work. In this edition, we are looking at how the world of telecommunications is responding to the urgency of preserving our natural environment.

Telecoms may be responsible for only 2 per cent of global carbon emissions - far less than other big industries - but 2 per cent of a vast number is still a very large number indeed. And it's going to get bigger as more and more people connect.

Hugh SCHOFIELD

Much good work is already being done to cut power consumption with alternative energy, smart metering and so on. But given the projected increase of telecoms traffic in the years ahead - is that going to be enough?

Hugh SCHOFIELD

Gee Rittenhouse, you are Head of Research at Bell Labs. What are your predictions of the carbon footprint of the telecoms industry if things remain pretty much as they are now?

Gee RITTENHOUSE

Head of Research, Alcatel-Lucent Bell Labs

Given the current traffic projections, we expect the carbon footprint of the network to grow substantially over the next ten years. Of course there is a lot of work going in Bell Labs and throughout the industry to reduce this carbon footprint. But if we applied all the technologies that we know today, at best the carbon footprint will remain flat - the same amount of energy dissipated ten years from now as we have today.

Hugh SCHOFIELD

So what you are saying is that if we are going to have a serious go at reducing the carbon footprint, something far more radical is going to be required?

Gee RITTENHOUSE

Yes, in fact to address exactly that point, a handful of scientists got together in the summer of 2009 and constructed a mathematical model of the network - including wireless and optics and access and all of these parameters - and then calculated what the minimum amount of energy required for the network is.

Hugh SCHOFIELD

And what is that figure? What is the minimum required?

Gee RITTENHOUSE

The minimum required is a factor of 1,000 reduction.

Hugh SCHOFIELD

Hang on, so you are saying that if this model was applied, the amount of energy emitted by the telecoms industry will be a thousandth of what it is today?

Gee RITTENHOUSE

We know it's possible, but it requires a very different way of thinking about the network. It's not using today's network and extending it down - it's building it from this fundamental model up. But we know it's possible.

Hugh SCHOFIELD

So that's the target: designing a network that eats up just 0.1 per cent of the energy currently required. Clearly it's an immense task - too much for a single company, a single laboratory - this is something in which the whole of the telecoms industry has to be involved.

That's why Alcatel-Lucent and Bell Labs have now created something unique: Green Touch. It's a consortium of telecoms operators, manufacturers, universities and non-profit organisations with a mission to conceive and demonstrate the effectiveness of this revolutionary low-energy network - all within the next five years.

Ben VERWAAYEN

CEO, Alcatel-Lucent

This is an innovation not just for the communications industry - this is an innovation that can be used far beyond.

Rod TUCKER

University of Melbourne

The factor of a thousand is not totally out of the question - it's something that could possibly be achieved, it's a realistic number. And it's the sort of number we are going to need in the future when the Internet grows to a very large capacity - we will need that sort of improvement to make sure that the energy consumption is kept under control.

Johan De Boeck

IMEC

I am scientist enough to see the challenge. So I think if we can really see the aim of the thousand and we can see the magic behind the number, we have something to work towards. And having a roadmap is something, which has always been very driving, very challenging for a scientist. So tell them there is something they cannot do and they will go moving...

Muriel MEDARD

MIT

There is a huge opportunity for us in order to make a real difference in the way that networks are developed so that they are sustainable, not just that we are connecting people but that we are connecting people in a sustainable way.

Roger NOBLE

Freescale Semiconductor

In the order to create real change, real improvement to the energy consumption in telecommunications networks, it requires a holistic approach - we need to be looking at all elements in the value chain, all partners so the manufacturers and the operators, as well as the semiconductor vendors. And it's that dimension of the Green Touch initiative, which is so exciting to us.

Jeong KIM

President, Alcatel-Lucent Bell Labs

If we sit down and think about it - the content of what we are trying to say should sink in. Once it sinks in, you realize: "Oh my God", there is a great opportunity for all of us in our industry to make innovations, to make our life so much better.

Hugh SCHOFIELD (voice over)

Cutting the carbon footprint a thousand times - what an extraordinary vision. And could this be an inspiration? Could other industries follow the telecoms lead?

Hugh SCHOFIELD

Well, we've been joined now by Claude Fussler. Now, Claude you are an expert on the environment and on innovation and you advise the United Nations and various big companies. What would you say will be the effects, first of all, on the telecoms industry itself if this sea change in efficiency goes through?

Claude FUSSLER

Director, U.N. Programme "Caring for Climate"

By making this tremendous jump, you know a factor of thousand; it will actually be able to grow while decreasing its energy impact. And the main exciting thing is that it will be able to provide now products and devices beyond the digital divide because a lot of poor kids in the world, nurses, hospitals, cities cannot afford digital technology because of its energy load: it needs wires, it needs generation capacity. With a thousand-factor change you can run with devices on small solar cells, on little batteries, and you can give access to education, to health to those people. And that's very exciting.

Hugh SCHOFIELD

And more globally, Claude, what will be the repercussions for the economy as a whole if this commitment by the ICT sector to cut energy consumption a thousand fold is achieved?

Claude FUSSLER

Well I think it's an example. What I think is that a lot of CEO's from other sectors, from the car sector or from the utility sectors, should scratch their heads and say: "Why can't we be as forward-looking as the ICT sector?" Second, because of the factor thousand, you will find smarter appliances, smarter traffic systems, smarter cars, smarter everything that will continue to decrease our energy load. So this is very promising if everybody starts to play in this game.

Hugh SCHOFIELD

Designing the network of the future, a network that consumes less, costs less, a network above all with minimal impact on our precious natural environment. It's a dream, but a necessary dream. With the right mix of hope, inspiration and innovation, it can become real.