Activate Johannesburg 2014
Keynote Address by Dr. Bitange Ndemo
Speech Copy

Ladies and gentlemen, good morning. It is a pleasure to be here with you today.

This year marks the **25th birthday of the World Wide Web**, and I have been asked to reflect on its impact across our continent and to look ahead to the future. I thought I would **start by telling you the story of the invention of the Web by Sir Tim Berners-Lee**, a man I have been lucky enough to meet on a number of occasions.

In the late 1980's, Berners-Lee was a young computer scientist working at CERN - the European Organisation for Nuclear Research. What struck Berners-Lee was that **there was no easy way for these scientists to share information** across teams. They might be working on similar projects and they could even use this new technology - the internet - to email files to each other, but when the files arrived, you would have to get a new programme (probably on a floppy disc), install it, and try to figure out how this information might be relevant to your work.
And then if you found something useful you wanted to share with another team, you had to do the whole long process in reverse!

This was **incredibly frustrating for everybody**, and so Berners-Lee decided to do something about it - by **combining two emerging technologies - the internet and hypertext. In March 1989, he filed the original proposal for the Web. Here's a picture of that proposal.**

I'd like to draw your attention to what his boss wrote on the top. **Vague but exciting.**

Berners-Lee persevered though, coding up the Web on one of Steve Jobs' early computers and getting support for the project within CERN. In just a couple of years, the World Wide Web was gaining traction, and **in 1993, Berners-Lee succeeded in ensuring that the source code for the Web was made available for free, for ever. The rest is history.**

I find this story incredibly inspiring, and there are **two key lessons I take away from it**. **The first is that in every problem there is an opportunity.** Africa has many challenges, and so we have many opportunities to innovate and lead the world! **The second key lesson is that of perseverance.** Even though the initial response to his proposal was luke-warm, Sir Tim kept pushing. For the internet to have a truly transformative impact on Africa in the next 25 years, we too will need this determination.

I would now like to tell you a little bit about my work in Kenya, how I applied these two lessons, and share some new ones that I learned along the way.

I was appointed as Permanent Secretary in the Ministry Of Information and Communication in December 2005, and I was tasked with helping to **make the Internet more accessible and useful to Kenyans. At this time, the main problem was bandwidth** and many African countries were discussing how to work together to link Africa to East African Submarine system. This quickly proved incredibly frustrating. There were many committees and lots of meetings - that just agreed to have more meetings.

In fact, if you added up all of costs of flights and hotels over 5 years the process had already taken - it would have been almost as expensive as the cost of laying the cable!

In the meanwhile, while we talked, the digital divide was widening by the day.

After trying to work within the system for about six months, **I took a big decision.** I booked a meeting with the president and told him **we should break away and do our own thing. This was incredibly risky** - it would expose us to more cost and could annoy other countries in the region. He asked me to explain my ideas to a bigger group - focusing on how better access to the Internet could build the economy. I invited him to this meeting too and to my surprise he stuck around for the whole meeting! I received formal backing to look at new options. I packed my bags and flew to the Middle East to look for partners. **Within two years - by mid 2009 - we had landed the TEAMS cable that provided the vital bandwidth that Kenya needed.**

At the same time, we knew that for ordinary Kenyans to benefit we needed to **liberalise the telecommunications market.** We drafted a holistic ICT policy - which included market liberalisation in 2006. This helped to put ICTs at the centre of the overall vision for the country - called Vision 2030.

In reforming this market sector, we had to battle many established interests and some of us working on the reforms even received death threats.

But **the results of the liberalised market combined with the available bandwidth were dramatic.**

As you can see, in the years after the TEAMS cable came on stream and we liberalised the market, **we more than doubled the number of Internet users in the country.** Since then, our policies to increase bandwidth even further, drive down prices and stimulate relevant local content have seen **Kenya become one of the most connected countries in Africa.** Today, Kenya has the largest amount of international bandwidth per user in Africa, with 24 kbit/s per user; South Africa follows at 19 kbits/s.

I think **critical success factors for us included a strong commitment from the very top, and the fact that we had drafted a clear and well rounded policy. We knew where we needed to get to, and what steps we had to take to get there. We were also not afraid to take calculated risks.** For those of you working in policymaking, I hope that you will be able to recreate this recipe for success.

For me, it was a positive step for South Africa, that last week, President Zuma explicitly mentioned broadband access as a key priority in his state of the nation address.

Let's now widen the lens and take a look at the state of **Internet usage across the world.**

As you can see, **penetration in Africa has risen dramatically, but still lags far behind the rest of the world.**

The **continent also does badly in the Web Foundation's Web Index** - a major study on how useful the Web is to citizens in 81 countries around the world. The top-ranked African country is right here - South Africa - but only at number 35. **In fact, 7 of the 10 bottom countries in the index are African.**

But despite the relatively low penetration rates and other challenges, **the Web has has sparked home-grown African innovations which are leading the world.** Many of you will know of mPesa and Ushahidi - just two examples.

What really interests me is when the Web is used to increase productivity in low tech sectors such as agriculture and improve the day to day life of people across our continent. Today, I'm going to share **just two**

examples with you, both focused on agriculture, a sector which contributes nearly a third of Kenya's GDP.

The first is an application called **iCOW**. This app helps dairy farmers improve their productivity through a combination of web and SMS technology.

M-Shamba is another application that is leveraging the power of the Web to improve agricultural and economic outcomes in Kenya. This service - which uses the web, smartphones and feature phones - cuts out the middle man and allows small farmers to get the best prices for their produce.

These two apps are just the tip of the iceberg. What I have seen in the pipeline is going to have a much bigger impact. Just two days ago, I was at the Pivot East conference in Nairobi, where more than 50 new apps were showcased - most of them focusing on poverty reduction.

So, we know that the Web is changing lives every day. Now I'm going to tackle the elephant in the room. **What is the real reason for the continued existence of the digital divide?**

The answer is cost.

Yes, there are other factors, like locally-relevant content or illiteracy. But **in essence, if more people could afford to access the internet, it would unlock more innovation and progress.**

As you can see from this slide, **fixed internet remains prohibitively expensive for most Africans.**

Mobile broadband is somewhat more affordable, but still remains much more expensive than it is in the developed world, and far above the UN goal of 5% of monthly income.

But even these figures are simplistic, skewed by the very unequal income distributions that exist across the continent.

In 2013, the Alliance for Affordable Internet, which I am proud to chair, produced its first ever affordability report.
As part of this, we looked at the true cost of broadband for the millions of people who live on less than $2 per day.

The results were not surprising, but they were sobering.

For those living on less than US$2/day, entry-level broadband costs an average of 40% of monthly income, and in many countries this figure exceeds 80% or 100%.

Let's make this more real. In Zambia, more than 10 million people live in extreme poverty, and these people would have to spend at least 35% of their income to afford mobile broadband services or 135% of their income to access fixed broadband.

The results are the same or worse in other African nations.

Clearly, costs this high keep the internet out of reach for most Africans.

So, what have we learnt so far?

First, we can see that **rapid progress is possible, with innovation, perseverance, strong leadership and a willingness to take risks.**
The invention of the Web and our experience in Kenya demonstrate this.

Second, we can see that affordable access to the internet is already transforming lives day by day across the continent.

Third, we can see that high prices are the key obstacle.

So where now should we focus our efforts?

My answer might surprise you. It is not in technical innovation. **It is in the more dry and difficult area of policy and regulatory reform.**

Why, you might ask?

Let me tell you. It is because **the technical solutions to provide affordable access to the internet are already well advanced.** Right here in South Africa, companies like Microsoft are proving that TV white-spaces can be used to 'broadcast' the internet in rural areas at low cost, and that by combining this technology with solar power, we can connect almost anywhere very cheaply. You have probably heard about companies like Google and Facebook who are investing in balloons, satellites and drones to beam affordable access to every corner of the planet. **So, the technology will take care of itself.**

But, the best technologies in the world can't drive progress if they are held back by regulation and policy. Time and again though we see that by creating the conditions for open, competitive and innovative broadband markets - as we did in Kenya - regulatory and policy reform can leverage very large increases in internet access. To succeed, these policies must focus on enhancing supply of the internet and creating demand for it.

Before you dismiss this as the ramblings of an academic and policy-wonk, let me tell you that I am not alone in this view.

The Alliance for Affordable Internet was formed less than eight months ago, and it has already become the world's broadest technology sector coalition.

Our mission is to help realise the UN target of entry level broadband priced at less than 5% of monthly incomes in every country in the world.

It has more that 60 key players from the public, private and not-for-profit sector as members - organisations with the experience, influence and resources to make a real difference. It is led by the World Wide Web Foundation - which was set up by the inventor of the Web, Sir Tim Berners-Lee. And some of our other members are here today - Omidyar Network, Google and Microsoft to name just a few.

What does the Alliance do? **All our members agree that policy and regulatory change is needed. We have researched good practices and we are working hand in hand with country governments to produce solutions tailored to local realities** - using the resources and influence of our members to make change happen faster.

If you are interested in joining this effort, I hope that you will visit our website to find out more about our work and how you can help.

Let me conclude by saying this. The Web has changed the world and Africa in its first 25 years. **25 years ago, you would not have put Africa and innovation in the same sentence, but today innovative Africans are using the power of the Web to develop solutions that are changing the world.**

We have lots of work to do and we must urgently update our analogue policies and regulations to reflect our digital age and drive prices down. **In fact, I believe it is so important, that the UN should include affordable broadband access as one of the Sustainable Development Goals to be agreed in September 2015.**

We are only at the start of our journey and we can see the progress. With innovation, perseverance, and strong leadership, the Web's next 25 years could see poverty reduced, democracy enhanced and Africa taking its rightful place on the global stage.

Thank you.
