

It is an honour to address you today.

It is also a great pleasure to share my passion for health, wellbeing and development, and my enthusiasm for what the 17 Sustainable Development Goals (SDGs) can do for humanity.

As a medical doctor and global policymaker, I will focus on health and its cross-cutting nature. And of course, I will talk about the critical role that technology and innovation in a range of sectors can and should play.

Health, wellbeing and sustainable development are intrinsically connected, with health regarded as a precondition, as well as an outcome of successful sustainable development. I will identify some of the challenges and opportunities for implementing this, providing examples from my own experience.

### **I. Health and wellbeing: where we are now**

In the years since I entered medicine, we've made huge strides in building health systems, reducing child mortality, improving maternal health, and fighting HIV/AIDS, malaria and tuberculosis.

Since I became a global policymaker in 1987, preventable child deaths have declined by more than 50% globally. Maternal mortality has fallen by 45% worldwide, and 6.2 million lives have been saved from malaria.

Yet... each year, more than 6 million children still die before their fifth birthday. Every day, hundreds of women still die during pregnancy or from complications relating to childbirth.

In 2012, household air pollution alone caused an estimated 4.3 million deaths and ambient air pollution accounted for an estimated 3 million deaths. Indoor air pollution remains therefore the greatest environmental health risk.

Many of these deaths can be avoided: through hygiene, water and sanitation, healthy food, clean air indoor and outdoor, healthy living, and appropriate prevention, care and immunization.

In many European countries, older people with multiple morbidities are unnecessarily kept in expensive hospitals where they do not receive the care needed and are often exposed to multi-resistant infections.

New technologies are therefore needed - widespread and available - to care and monitor people as much as possible in their own homes and communities. It is time to *disinvest* in some hospitals and invest instead in, say, community-based care and connectivity, and to better promote healthy nutrition, mobility and sports to help prevent disease and disability.

Indeed, more is needed faster to achieve the SDGs everywhere: bold science to develop affordable and accessible technologies, partnerships and new resources.

**It is high time to fix our sights higher – and to step up our level of ambition.**

We must create new momentum for using innovation and technologies in health and wellbeing... constantly scan for new opportunities across sectors... and set new standards.

In practical terms, we have to transform health and care for the digital age by disinvesting in the old ways and instead investing in truly innovative community-based healthcare and personal health.

So how can that happen?

## **II. How can technology power SDG success: the time is now.**

To collectively solve these huge challenges, we must use the transformative power of science, technology and innovation.

The development of technologies is an essential part of reaching the SDGs for health, and I'm not just talking about medicines and vaccines. In health, every few decades have seen a disruptive technology transforming lives and healthcare practice.

In 1870, the Germ theory of disease and antiseptics led to enormous advances in public health. The early 20th century brought us modern hospitals and licencing of health professionals. From 1928, penicillin revolutionised treatment of infectious diseases. In the 1940s, social and health insurance meant people could receive care without being thrown into poverty.

Right now, in Europe: ageing populations and high numbers of chronic multi-morbidities mean the **need for care in communities and homes.**

**Health and wellbeing are and have to enter the digital age.**

Ah, connectivity: the most revolutionary and potentially empowering force of the age. The future will be shaped less by borders than by global supply chains and connectivity, a world in which the most connected powers — and people — will win.

### **Our destiny is connectivity - not geography**

Beneath the chaos of a world that so often seems to be falling apart, a new foundation of connectivity helps us to pull together.

### **III EXAMPLES FROM PERSONAL EXPERIENCE**

I met refugees from the Middle East, in Berlin, being trained in mental health guidance. Later, they counselled people in the conflict-affected areas they had escaped from using secure **connectivity tools**. Innovation - cellular technology and the cloud - overcomes physical barriers.

**Data insights and disease** and Increased investment in data collection plus digital health technologies made it possible to better monitor **the ebola** epidemic and geo-localise its spread and progress even in conflict zones.

### **The widespread coverage of cell phones helps democratise healthcare in emerging economies:**

In Kenya, the “**health wallet**” - accessible from cell phones - removes barriers to universal access to care by transferring government funds directly into citizen accounts, even to those living in slums and remote villages, allowing them to purchase services and products.

Industry developed a telehealth **platform**, using a mobile phone **app**. This enables midwives to build a health profile of pregnant women by collecting data from physical examinations and tests at local nursing clinics, or even at the expectant mother’s home. Data is uploaded onto a central Mobile Obstetrical Monitoring server for remote but highly responsive monitoring, review and care.

Results were impressive: detection of very high-risk pregnancies increased by three times during the 2014 pilot study and zero maternal deaths recorded. There was also a 99% reduction in anaemia from first to third trimester through enhanced patient management.

Drones for blood deliveries in the developing world: a robotics company teamed up with the Rwandan health ministry to hasten the delivery of blood to 12 hospitals in remote areas, each hospital serving half a million people.

The Zipline project slashed delivery time from four hours to an average of 30 minutes. 5,500 units of blood were delivered in a year, often in life-saving situations, reducing maternal deaths and high incidences of malaria-induced anaemia, common in children.

### **Lenses for cataracts**

- cataracts are a major source of blindness worldwide and in India, with at least four million cases reported annually, it contributes to nearly one-quarter of the world's blind. Cataract related blindness can be avoided by timely intervention and surgery, but the high cost of the lenses hampered this. A new manufacturing facility introduced lenses at US\$10 compared to \$60-\$100 - a fraction of their cost a decade ago.

When 10 years ago technologies were generally developed in the industrialised parts of the world and take up in the poorest takes a lot of time, this in some cases is now being reversed and this trend is very promising indeed.

The examples demonstrate how different fields are of interest for health and health care technologies, how health will be improved and made less costly with the help of new technologies and how the lack of health professionals worldwide will be overcome.

In addition to the technologies, we also have to grapple with concerns of: **appropriate licensing and IP agreements, pricing, distribution and financing of course.**

### **IV Now is the time**

We need to accelerate technology adoption and widespread accessibility and affordability. Just imagine...

***I can imagine all children being vaccinated and protected against malaria with a single long-lasting injection in the next decade.***

While science and industry develop the technologies, **I can also imagine** a wide partnership and investment platform developing the ways to make those **technologies available and affordable** to all.

***I can imagine scientific advances drastically improving mental health care.*** For example: through affordable accessible treatment for schizophrenia and depressions, improving the lives of millions of people worldwide.

***I can imagine everybody has easy access to safe drinking water, toilets and basic hygiene...***

***I can also imagine that everybody has basic information*** at hand about behaviours that protect from disease and enhance healthy lives through their personal actions.

***I can imagine less asthma and chronic bronchitis through cleaner cities*** – reduced pollution and improved air, enabled through technology.

## **V Technology can be a double-edged tool**

While technology brings solutions to many problems, it has also brought new challenges. For example, while information and communication technologies have allowed huge advances in health, education, data and connectivity, they have also led to security and privacy challenges.

Human rights must be safeguarded to realise the opportunities presented by new technologies and big data – not least relating to citizen’s health data. Constant media reports about data breaches, along with the new EU Directive of Data Privacy, show we only have just started to grapple with these issues.

## **VI. Partnership, co-operation and roadmaps**

To be successful, organisations must change from working in “silos” and instead work across sectors in a far more integrated way.

The integrated framework to the SDGs - where I started - requires that close co-operation across the multiplicity of actors that now populate the global health governance landscape.

We have an opportunity to build networks among these diverse actors, bringing together their efforts to work across health issues and sectors.

For example, tackling diarrheal diseases might bring together expertise on disease prevention, control and treatment, financing of infrastructure, local capacity building efforts, research funding for innovative solutions, community level initiatives, and the development of innovations for safe water, sanitation and hygiene.

To reach the 2030 SDGs goals, the development industry — NGOs, donors, governments and private sector — must fully embrace the transformative power of technology.

The private sector is not only a donor, involved in the SDG fund: we must engage with the private sector in the core design of the future programmes I'm describing here, in implementing these programmes in the field, and then performing essential follow-up work.

Health is a cross-cutting concern and breaking the silos between sectors will not only help us to reach the SDGs and improve people's health and wellbeing but also provide **us with new insights** to look beyond the traditional tools to confront disease and create better health and wellbeing.

We will **shape our future** by confronting the huge challenges that we face in even faster, smarter and more focused ways.

Good luck to all of us engaged with this task.