



EPFL



When we buy new devices it's hard at first, because the expensive public market procedures are laborious, but when we eventually do it, the device that is delivered is often not adapted to our needs. It cannot cope with two things that are important here. The instability of the power supply is a major cause. Power shuts off abruptly while the device is functioning. And when it comes back there is voltage surge, which burns the devices because they are not protected from that and we do not have AC electric supply that is stable. So these new devices are not really adapted for here. They are maybe too delicate for us. And when the breakdown occurs We often do not have the means to repair it, because we have difficulties getting spare parts. There could be one technician in Yaoundé, but he doesn't have time, so repairing is difficult. So the devices could be new or old, but all are fragiles, and not really adapted to these problems or even humidity problems. And they are difficult to repair because there are no spare parts and no staff. So, we've estimated the availability of devices to somewhere from 5 to 15% in the whole country depending on the districts.

Notes

Summary



0m 12s

Meet the Lecturers: Solomzi



Technology Innovation for Sustainable Development

Hello, and welcome to this first video of our course entitled Technology Innovation for Sustainable Development. As you have heard from the brief video, there is a fundamental problem with existing technologies. They are poorly adapted to the context and the needs of countries such as Cameroon. Of course this is not restricted to medical technologies as many others are crucial for development. But which are they? How can we maximize the chances that new innovative technologies really deliver their full potential and in a sustainable way to the people who need them? We look forward to developing these topics and many more together with you, but first let us introduce ourselves as we will be your guides through this journey. Hello. My name is Solomzi or Soli Makohliso. I am Biomedical Engineer by training, but I have been involved with entrepreneurship and start-up companies for almost 2 decades now, in Africa, the US, and Europe. My area of personal interest now is technology-based innovation and entrepreneurship for purposes of having a profound and sustainable impact, especially in sub-Saharan Africa. It's a great challenge, but yet an exciting prospect for us to put together this course.

Notes

Summary



1m 54s

Meet the Lecturers: Klaus



Technology Innovation for Sustainable Development

Because I am a true believer in the power of technological innovation being able to leap-frog developing countries out of poverty in certain areas. Therefore by making this course, it is our wish that it can help make a contribution towards harnessing this power of technological innovation, even for those languishing at the bottom of the pyramid in society today. I am Klaus Schönenberger and I have an engineering background. I have spent over 10 years in the private sector, in research and development, operations and business development. I spent most of that time in the field of medical devices. After a certain while in my career, I noticed something that really shocked me: Less than 10% of the world's population consumes over $\frac{2}{3}$ of all medical devices produced. I was appalled. How could it be that such an overwhelming majority of the world's population had so little access to essential medical devices? This got me to engage on a fascinating exploration which took me back to academia as I am convinced that we have to deeply change the way we develop technological solutions to meet the needs and aspirations of the poorest.

Notes

Summary



3m 20s



Technology Innovation for Sustainable Development

I discovered also that there were many other essential technologies which were sorely needed in developing countries, but which remained desperately inaccessible to those who need them most. I am glad that you have decided to join this course. If you have registered for this course today we assume that you are interested in how technology innovation can foster sustainable development. You are curious about how technology can be an enabler for the poor to improve their lives. We assume that you want to learn how to proceed towards developing and deploying sustainable and impactful solutions based on technology innovation. Perhaps you have a project idea of your own? An idea of a new technology that could have an impact on poverty? Or perhaps, you are simply intrigued by the role that technology innovation could or should play in development. Whether you are from an industrialized country or from a developing country, whether you are an engineer, or a scientist. Whether you are employed in an existing company an NGO, an international organization or a state department. Whether you are an independent entrepreneur, or simply a passionate individual, this course is for you.

Notes

Summary



4m 37s



Learning objectives

After this course you will be able to...

- ...develop innovative technologies that contribute to sustainable development.
- ...understand and integrate the influence of the context.
- ...lead the process -from initial concept to product scale-up, while minimizing risk.

Technology Innovation for Sustainable Development

In this course you will learn how to develop innovative technologies that contribute to sustainable development in countries in the Global South. For that you will need to understand, and be able to integrate the influence of the context that prevails in these countries. We will give you a set of powerful strategic tools, that will make you a leader capable of steering your project towards success. This involves understanding what are the crucial steps in the process, the risks and opportunities. We will teach you how to minimize these risks and capitalize on the opportunities. What we are aiming for is not the development of a one-off solution for, say a village in Africa or South-East Asia.

Notes

Summary



6m 01s



This is not just about making one prototype and considering the job done. We want to teach you how to come-up with solutions that can be widely and sustainably deployed and scaled-up, so that impact is maximized. As we will see in detail, our strategy relies on entrepreneurship. We believe that the most efficient and sustainable way to deploy a technology innovation is to find a robust business model, which will make sure the technology is made widely available and also supported in the long run. Now let us have a look at the structure of this course.

Notes

Summary



6m 51s



	Main Topic
1	Basics on poverty and its alleviation
2	Essential technologies
3	Process overview Tool 1: Impact Canvas
4	Tool 2: Product Value chain
5	Tool 3: Business Model Canvas
6	Complete process and use of tools

Technology Innovation for Sustainable Development

The course entails 6 chapters. In the first chapter, we will provide you with the basics on poverty and its alleviation. You will learn how poverty is defined, how it is globally distributed, and about its determinants. You will also hear about the major initiatives launched by the United Nations to fight poverty, such as the Millennium Development Goals before and the Sustainable Development Goals currently. In this chapter we will also discuss which technologies could be deemed essential for development. And we will tell you about the challenge and the particularity of the context found in many or most developing countries, and how this context influences technology innovation. In the second chapter you will hear about the 8 Essential Technologies, where we will give you an overview of why they are essential and also discuss their global access. In chapter 3 we will give you an overview of the process to develop and deploy technology innovation adapted to the context of those countries. We will present the first of 3 strategic tools to you, which is the Impact Canvas. Which is essentially a tool that helps you define your desired social impact or objective, and strategies to construct and monitor steps towards that social objective or impact.

Notes

Summary



7m 32s



	Main Topic
1	Basics on poverty and its alleviation
2	Essential technologies
3	Process overview Tool 1: Impact Canvas
4	Tool 2: Product Value chain
5	Tool 3: Business Model Canvas
6	Complete process and use of tools

Technology Innovation for Sustainable Development

We will also introduce a case study that will help us better illustrate the use of the tool. And in chapter 4 you will learn about what we call the Product Value chain tool. This is really an important methodology or tool, as it allows you to understand all the stages of the product's lifecycle, including the influence of the different stakeholders and the context itself, of course. In Chapter 5 we will introduce what is termed the Business Model Canvas tool, which is a great and relatively simple-to-use methodology to generate solid and sustainable business models. However, we have adapted this tool in this course to also suit the specific objective of technology innovation for sustainable development. And finally in chapter 6 we will discuss all the 3 steps of the technology innovation process in more detail, as well as how and when the 3 strategic tools discussed before are used to maximize impact and minimize risk of failure.

Notes

Summary



9m 04s



Technology Innovation for Sustainable Development

We look forward to your participation in the course. We think that we all have a role to play in trying to improve the lives of the poorest people on this planet. This MOOC is a unique opportunity also for us, as we have a chance to learn from the experience of hopefully thousands of people who are working in this field. We really hope to get your feedback so that we can share the best practices and have a wide-scale impact on this unacceptable divide between the rich and poor, between industrialized and developing countries. We wish to repeatedly emphasize that developing technology innovation for sustainable development is not something that can be done alone. Such projects require a major effort to reach out and collaborate with people from various disciplines and in various countries. What is needed, to start with, is a good dose of entrepreneurial spirit, grit and determination, but also a spirit of openness and flexibility. For the rest, it is the purpose of this course to give you the necessary knowledge and tools. Now let's get started!

Notes

Summary



10m 16s