



ÉCOLE POLYTECHNIQUE
FÉDÉRALE DE LAUSANNE

[illegible]

Search MOOC



Video



EPFL



Technology Innovation for Sustainable Development

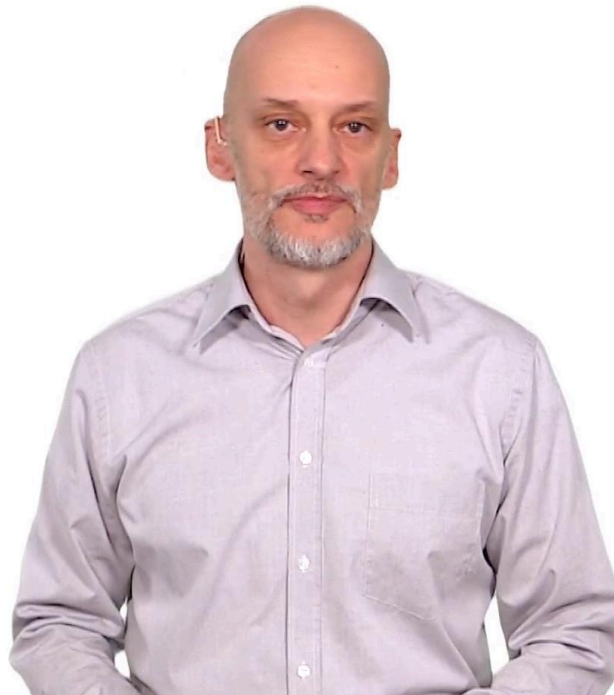
We have now come to the end of this course on technology innovation for sustainable development. We have seen the important role of technology in development or lack thereof, and discussed those technologies we considered to be essential. We have also seen that the context in low and middle-income countries is rather specific. And technologies developed elsewhere without taking in consideration the specificity of this context run a high risk of failure. We have also insisted on the importance of co-development and collaboration as absolutely mandatory. Finally, we presented to you three fundamental tools which will help you de-risk your project and help you towards creating impactful and sustainable ventures for your technology. That is, One, the impact canvas, Two, the product value chain. And finally, the sustainable business model canvas. All three are important and complementary. Let's take a step back and consider the potential impact on sustainable development arising from the entrepreneurial approach we have discussed. We believe that the approach we have presented has the potential to bring about change at a large scale. Because it does not stop at the technology development stage.

Notes

Summary



0m 17s



y Innovation for Sustainable Development

In addition to developing technology solutions that match the needs and context of the poor, we also presented an approach to sustainably deploy and scale up the technology. This is actually often and by far the most difficult part in innovation. Our assumption is that a well thought-out business model led by an astute entrepreneur can really create impactful and durable solutions. Why do we think it works? Well. It works because this has shown to be successful in industrialized countries. There is no reason why an entrepreneurial approach can't work in low-income countries. Quite the opposite. Just go to the streets Yaoundé, Lagos or Nairobi. And you will see how vibrant and dynamic the entrepreneurial spirit is in these places. Everything gets sold or leased by people who have a great sense of business. What this MOOC hopes to achieve, is to steer entrepreneurial culture which is present everywhere, towards addressing unmet needs in low and middle-income countries. It is our hope that this MOOC can contribute to increasing the sheer mass of innovators, having effective tools and a sound approach. Which will increase the chances of successful breakthroughs.

Notes

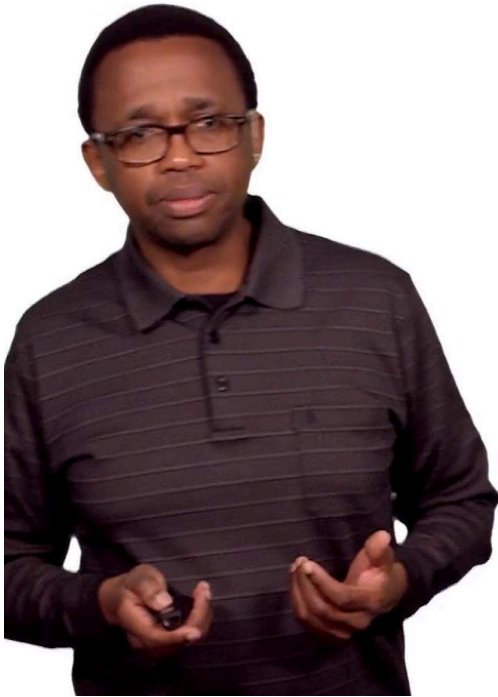
Summary



1m 38s



Scarcity: an engine for innovation



Scarcity:

- Financial resources → More affordable
- Skilled personnel → Simpler
- Quality infrastructure → Less demanding

Not just for LMICs, but Global Interest.

Technology Innovation for Sustainable Development

Another question you might ask yourself is, how innovation aimed at solving the unmet needs of low-income countries could also benefit the rest of the world? As we have seen, developing technologies for low-resource settings, entails addressing the issue of scarcity at multiple levels. Not only scarcity at the level of essential technologies, but also scarcity at the level of financial resources, skilled personnel and proper infrastructure. Basically such a situation requires, and is likely to lead to, solutions that are more affordable, less complex, and use less consumables. Remember, consumables not only generate higher costs, but also plenty of waste that must be disposed of. A process which typically generates greenhouse emissions above and beyond the carbon emissions indirectly derived from transportation of high volumes of consumables.

Notes

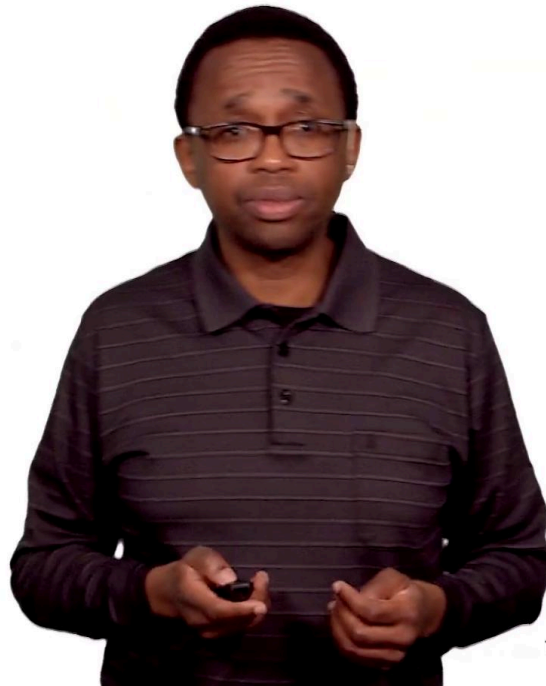
Summary



2m 52s



Scarcity: an engine for innovation



Technology Innovation for Sustainable Development

Therefore, it is the reason why we need more robust technologies for these settings, as they will have longer life-cycles, leading to less disposals, which overall will enable to reduce their total cost of ownership, and thus make them more affordable. The lack of skilled personnel also forces us to rethink the complexity of the technology. "Can we make it simpler to use?" This rethinking will contribute to reducing misuse and will improve adoption of essential technologies overall. And finally, the lack of certain basic resources and quality infrastructure, such as water and electricity, is a driver for low consumption solutions, which consume less electricity or water and are less dependent on existing expensive infrastructures. By now you will certainly have noticed that the benefits from solutions that are supposedly designed to overcome challenges in low-income context, are in fact potentially of high interest in high-income countries as well! Making products that are cost effective, simple to use, and low-consumption, are highly desirable features today globally, as we face population growth and climate change issues.

Notes

Summary



3m 49s



Call to action



Technology Innovation for Sustainable Development

Therefore, the approach and tools that you have learned in this course will hopefully not only benefit society in low-income countries, but rather the whole world. Because the innovations required today and tomorrow, world over, needs to be cost effective but also sustainable and impactful, Which would be your own contribution to the sustainable development goals. As a final word, I go back to the wide gap in the standards of living between developed and less-developed regions, such as Sub-Saharan Africa, for example. The strong correlation we typically see between the level of access to essential technologies and the quality of life, or poverty levels, is striking, and provides a persuasive illustration of the important role and contribution of technologies to the overall quality of life in society. However, while technology has served industrialized regions well, the choice and use of many less or ill-advised technology approaches has come back to haunt us by way of massive environmental cost we see today. But the flip side for the still less-industrialized communities is that technology innovation actually represents an opportunity for these communities to leapfrog themselves.

Notes

Summary



5m 19s



Call to action



Technology Innovation for Sustainable Development

For example, today in Nairobi, you can find several street traders who are barely literate but are quite adept at carrying out various banking operations from their mobile phones. Thus these countries have already leapfrogged the rest of the world because today only a very small fraction of the industrialized, typically tertiary educated population are using - or even able to do mobile banking. So you, as the new generation of innovation experts and entrepreneurs not only can and should leapfrog the bottom of the pyramid especially, but you can and should also learn from, and correct, past mistakes of unsustainable technology-based practices. Therefore my final word, and final message to you is that: go out and seize this golden opportunity: Go innovate for the economy, innovate for society, and innovate for the planet. Adding to what my good friend Soli just said, I would like to conclude by calling you all to become entrepreneurs. You don't need to be an academic or to have completed an MBA in a prestigious business school. All you need is your intelligence and your determination to succeed. Trying to help the poorest in this world is a strong motivation.

Notes

Summary



6m 46s

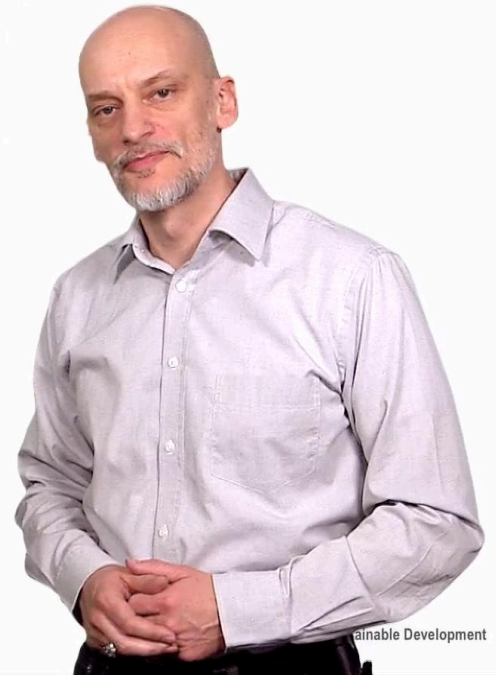
Acknowledgements



Matthieu Gani



Olivier Chappuis



Sustainable Development

However, it is essential to keep our goal in mind at all times, as success can steer us away from our initial target. We strongly encourage you to start your project right away. Because the adventure is great, and the goal is crucial. We would be very grateful to you if you agreed to update us about what you are discovering, about what works, and what could be improved in the methodology. We sincerely believe that you know everything you need to know by now, and for the rest, you will learn it as you progress with your project and collaborate with the members of your team. The ball is in your court. Finally, we would like to thank the MOOC team who made this course possible. All of them have spend numerous hours working on this MOOC with us, and we're very grateful to them. We would like to give special thanks to Matthieu Gani and Olivier Chappuis who worked with us on the content of the course.

Notes

Summary

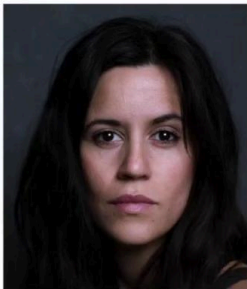


8m 13s

Acknowledgements



Sophie Inglin



Cibelle Avelino



Amabile Development

We also would like to express our gratitude to Sophie Inglin, who captured all the local videos and interviews filmed in Cameroon and Burkina Faso, and Cibelle Avelino, who mounted the videos with great patience and great expertise.

Notes

Summary



9m 14s

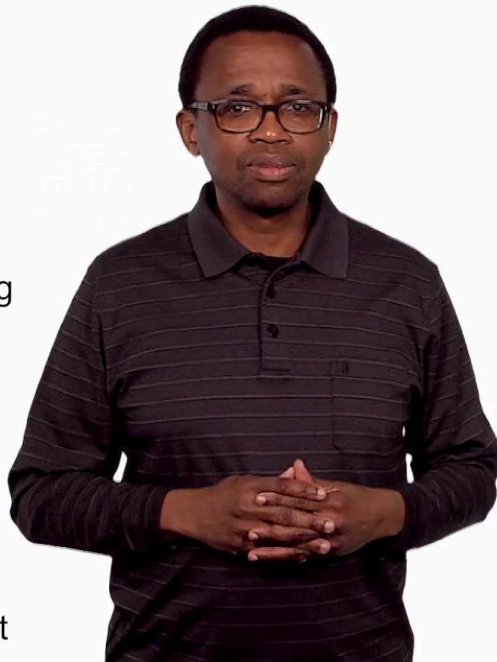
Acknowledgements



Christian Vonarburg



Gwénaél Bocquet



Sustainable Development

Christian Vonarburg and Gwénaél Bocquet, kept pushing us on the course design and pedagogic approach. They gave us great advice and encouragements, and we are very grateful to them.

Notes

Summary



9m 31s

Acknowledgements



Eloge Seri



Kyrstia Banidol



Sustainable Development

Eloge Seri helped us with the transcripts, and Kyrstia Banidol supported us with the management of the MOOC platform. We thank them very much for their help.

Notes

Summary



9m 45s



Stefan Könnecke



Sustainable Development

I'm sure you appreciated the artwork on the 3 tools we presented. We owe this to Stefan Könnecke, who did a great job in spite of the many changes we had to make. We would also like to thank all of our partners and friends in Cameroon, who helped us better understand the challenges they are facing. We're especially thankful to the people working in the health system. They are facing amazing difficulties with great courage and determination. We would like to dedicate this MOOC to them. Goodbye. Goodbye.

Notes

Summary



9m 56s