

## Part 1 : An all-digital world

*Théo* : Hello

**Guillaume** : Hi, Théo.

*Théo* : Hey, cuz.

**Guillaume** : What's up?

*Théo* : I just got a job at Phoneland.

**Guillaume** : Seriously? Selling smartphones?

*Théo* : By the kilo.

**Guillaume** : What do you mean by the kilo? We should talk.

*Théo* : Oh, really?

**Guillaume** : I was actually going to ask you to come and film me. We're studying this new MOOC at the minute.

*Théo* : Cool. What's it about?

**Guillaume** : The environmental impacts of digital technologies.

*Théo* : What do you mean? It's all virtual, there is no impact.

**Guillaume** : Honestly, that's what I thought too. I didn't realise before but now, cuz, I'm mind-blown. There are huge issues with it, we really need to make people aware. Come on, come to my place and we'll explain everything to them. We'll help them go from excessive consumers to informed users.

*Théo* : Okay, cool. I'm on my way.

**Guillaume** : Okay.

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**Guillaume** : A world, a world, a, a, world...She sells sea shells...This is for making movies, right? Roger, try the mic. An all-digital world.

*Théo* : Louder.

**Guillaume** : An all-digital world.

*Théo* : No, talk normally.

**Guillaume** : An all-digital world.

*Théo* : Okay, we're good.

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**Guillaume** : What's this thing for?

*Théo* : I don't really know, but it looks more professional.

**Guillaume** : Where did you see it?

*Théo* : In an online tutorial. I don't know why you want to tear down digital technologies anyway. It's super handy.

**Guillaume** : Digital technologies is amazing. It allows us to access information, understand the world, and share knowledge.

Hotline : And communicate with others.

**Guillaume** : Oh, there you are, hotline. I was actually about to explain my brainwave to Théo, about what motivated me to do the MOOC. Do you remember the IPCC paradox?

*Théo* : The what paradox?

**Guillaume** : You know, the IPCC, the group of intergovernmental experts on climate evolution. They're the ones who let us know about the impacts of our habits on the environment. The IPCC is legit, it's science. They use digital modeling.

*Théo* : Using big words already, are you?

**Guillaume** : Théo, it's true. It's our reality.

Hotline : The essence of digital technologies is handling information, or data. One of its uses is modelling which enables simulations that anticipate what could happen in the future depending on different scenarios. To do so, we construct a sort of digital copy of reality that tries to represent a phenomenon, or mechanical, biological and chemical laws in the form of mathematical equations.

We then inject various datasets to simulate different scenarios depending on numerous parameters. These models manipulate a very high quantity of data and require a lot of computing power. Thanks to digital technologies, we're now in a position to model cities, societies, disease spread, the impact of economic measures or even the climate. This enables us to better understand what is going on and in order to find or test out solutions to problems. To establish these scenarios, the IPCC uses digital models.

**Guillaume** : In summary, without digital technologies there'd be no IPCC, and without the IPCC, there'd be no warning.

*Théo* : Okay, so what was the paradox?

**Guillaume** : So, thanks to modeling, researchers realised that digital technologies has its own environmental impact that is by no means insignificant. And that's the paradox. It lets us assess the situation, so it's part of the solution. But it's also part of the problem.

*Théo* : Does digital technologies really take that much of a toll? It's just virtual after all.

**Guillaume** : It's more or less the equivalent to civil aviation.

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*Théo : No way!*

**Guillaume :** At the rate things are going, it'll soon be more impactful than cars, and after that.. The problem is the exponential growth.

Hotline : Let's rewind a bit. Right at the start in the 40s, the first computers were giant supercalculators that took up whole rooms. When the internet's forefather, ARPANET emerged, not Minitel, we thought that networking just a few computers would cover the entire planet's needs. Computers got gradually smaller. They had memory and could process all sorts of information thanks to programming languages and human-machine interfaces. They entered our homes and began to connect up to the internet. Nowadays, we're totally unaware of the fact we're completely surrounded by them. They've melded into our habits, our surrounding environments, and every single sector. In 30 years, we went through dozens of computers and other electronic equipment worth billions, and this is still happening.

**Guillaume :** Yes, the more digital technology there is, the more significant the environmental footprint. Our world has become so dependent on digital technologies that we wonder how we ever got by without them.

*Théo :* When we used to use candle light, you mean?

**Guillaume :** Let me remind you that we sent man to the Moon well before the early stages of the internet, but we're being promised the unlimited, as much as you want, 24/7. And what for? We already know our world isn't limitless and as the IPCC's models show, things are heating up fast.

*Théo :* Yes, but isn't digital transition a solution in itself?

**Guillaume :** I also used to think that it meant less paper, less deforestation, less moving around, less oil, but it's not that simple.

Hotline : Digital transition is a reassuring term, but it's not our reality. We're not in a digital transition. It's actually more like a digital expansion. We're piling up technology. 5G stacks on top of 4G which stacks up on 3G. We're not replacing anything, we're accumulating. We're computerising, but still using paper.

*Théo :* Well, we still have to blow our noses.

Hotline : Of course. We've offered the services of digital science to the environment for IPCC modeling as well as anything that can help us predict the weather, disease evolution, mobility optimisation, agriculture, and production lines. For a few years now, the digital world has been self-scrutinising, which is what we call Green IT. How do we make digital technologies more sustainable and responsible? How can we make it perform better and more efficiently in order to reduce its environmental impact? Use materials that consume less and implant them into higher-performing data centres energy-wise, tackle planned obsolescence, and write less gluttonous software.

**Guillaume :** Consume better and consume less too.

Hotline : Yes, because the problem is that consumption rates are soaring and research efforts aren't enough. The first impact is the manufacture of the devices consumers carry in their hands. Having billions of smartphones isn't sustainable.

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**Guillaume** : This can't go on.

*Théo* : So what am I supposed to tell my customers? That they should change phones because it's bad for the planet?

**Guillaume** : Maybe. In any case, they should consider it. People really need to be aware of what they buy. Let's go, I'm ready. Are we doing this or not? Action.