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Before opening the floor to questions, I would like to comment on the link between technology and healthcare and the link with society in general. All innovations have to go through a three-point checklist. First point is that it has to be socially acceptable, and it will never happen if it is not. We have seen how difficult it is in the healthcare space with the divergence of interests but that is part of the screening and social acceptability is probably what makes innovation adoption in healthcare very difficult. Second, it must be economically viable, and Jacques presented the challenge of matching supply and demand, the infinite possibilities of supply but also the infinite needs from very rare diseases, etc., and how you can organize this match. There is a lack of visibility on future returns that also hampers the evaluation, so I think this is the second test. The third is the technical feasibility and paradoxically, this is where we see fewer problems. We are not short of ideas on how things could be done but I think in healthcare we struggle with the first two more specifically and I think we should focus on them, even from a technology standpoint.

Looking at the evolution of how technology has been designed, we started with a product-centric design. That is how it has been done for instance in information technology with the development of processors. We heard from Francois yesterday about Moore's Law which perfectly illustrates this product-centric design approach: we have to produce, and we will figure out and create the demand. This era is over and with the rise of the Internet we have moved to a people-centric design. Unfortunately, so far it has been very consumer-centric design where you are the object and you have to wonder what it means to you, but that is the reality. Here in healthcare, we have the duality expressed by my colleagues on the panel of usurpation to consumers, not in all aspects but in many. We are still in the paradigm of consumer-centric design. We know and can feel that this time is over, and we need to move to a planet-centric design. We heard from Robert Sigal in the previous session that there is no health in an unhealthy environment, and I am not an expert, but I believe in that as a patient. If you look at the adoption of technology and how to include these parameters from product to consumer, to planet-centric, one very interesting approach that I like is looking at the question of negative externalities. It is known in economics that this is not a parameter that is taken into account, and this creates huge distortions in the debate around climate and I can recommend the book, *Climate after the End of the Month*, by Professor Christian Gollier from the School of Economics in Toulouse. It says some very interesting things about the paradoxical situation in which many find themselves where they are being asked to consider the long-term impact of their actions on future generations while struggling to make ends meet for their themselves and their families. In France in particular we can see this again with the price of energy. This is a very difficult conversation, but I think it is vital to include negative externalities in the

equation for technology design. We have to do it and find a way because if we do not the old consumer-centric paradigm will lead us into the wall, as it is doing currently.

The last point is performance, and you will have noticed that there are four Ps: product, people, planet and performance. We love acronyms in technology. I think that Jacques evidenced the problem, which is the visibility on the return but also the acceptability of the return. The Big Tech companies generate extremely high level of profits through technological breakthrough which may create some distortion and rejection of the technology evolution by the population. Consider the attitude of Mr. Zuckerberg welcoming Prime Minister Modi as a peer after he compared the number of Facebook users with the size of the Indian population, and you understand that such hubris rarely goes unpunished. As evidenced by Professor Carlota Pérez, an expert on the economics of technology, the initial phase of large and rapid technological developments whose value is captured by a few companies is always followed by a crisis of trust after which society needs to take back control of such technology. I think that is the perspective for technology. The parameters are here, and it is a complex equation, but I think that it is good that we have learnt a lot, built assets and now we understand the parameters. If we get together some more holistic views, we should be able to map some ways forward and anticipate, as was said before, and prepare for the future. I am not Utopian, but rather on the optimist side of the technology.

That is my contribution, and we now have time for a few questions on technology, ethics and economy in healthcare.