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## Fundamental Challenges and Opportunities for the ICT-Industry

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The ICT (Information and Communication Technologies) industry faces some fundamental challenges because certain engineering guardrails which have been guiding the industry for the last decades approach physical and/or economic limits. In my presentation, I will outline these and explain why these not only lead to performance challenges but also raise concerns in terms of the sustainability of the ICT industry and its services. I will then present some approaches of how to potentially overcome these challenges and what opportunities these present — for both researchers in academia and in the industry, as well as start-ups and established companies.

Stephan Schnez joined Huawei's Central Research Institute in 2019 where he is responsible for technology strategy and planning, based in Zurich. His core interests are related to quantum technologies and optics/photonics for novel approaches in communication and computing technologies. Before that, he spent more than seven years as a researcher and a project manager at ABB with a focus on energy storage and renewable energy systems.

Stephan Schnez studied physics at the University of Heidelberg (Germany) and at the University of Manchester (UK) and received his Ph.D. in experimental physics from ETH Zurich (Switzerland) with a thesis on quantum electronics and graphene nanostructures. He has been a lecturer on "Energy and Digitalization" at the University of Freiburg (Germany) since 2017.

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