

Building a Circular Economy in the Electronics Manufacturing Industry



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Biography

Emir Demircan, Director of Advocacy and Public Policy, SEMI Europe. He is a professional in public policy and government affairs in engineering technologies. At SEMI, he is responsible for leading pan-European advocacy actions on technology, talent, regulatory and government incentives. He previously worked in the 3D printing, chemical and digital sectors. He studied international political economy at King's College London.

A Circular Economy for Smartphones



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Abstract

Some smartphone brands incorporate increasingly Circular Economy approaches in their business and design strategies. This presentation will address some of these approaches and discuss the pros and cons of these. Design and product use patterns have to be a good match to yield a better "sustainability". Design concepts, such as various types of modularity, require e.g. a willingness of consumers to repair devices or manufacturers to put in place a return policy for used units. Modularity includes modules on the mainboard level, targeting at better reusability of individual functional blocks, but also fully open modularity platforms allowing third parties to build smartphone modules, which are compatible with those modules manufactured by others. Modularity however is not "for free": Modularity requires additional materials and components to connect and house modules. This has to be offset by a longer lifetime of the product. Circular design without changing economic cycles will not work out.

At end of life research targets at better recyclability of some scarce metals, which are not yet recovered in state-of-the-art smelters. Robotics are a way forward to extract components containing specific elements for a separate treatment. The presentation will give some insights in increasing the recycling potential through such approaches. Chosen examples are neodymium, tantalum and tungsten.

Legislation and standardisation try to keep pace with these trends. Policy intends to regulate mobile ICT devices under the European ecodesign regulation. The presentation will touch on the latest developments and will give an outlook on possible consequences for the smartphone market.

Biography

Karsten Schischke is Group Manager Product Ecodesign and Circular Materials at Fraunhofer IZM and holds a degree in Environmental Engineering from Technische Universität Berlin. He has 19 years' experience in applied research on sustainability of electronics. He has been involved in several technical product group

studies in preparation of the EU's eco-design product policy. Since 2008 he is coordinating large European research and innovation projects in the FP7 and Horizon 2020 programme, including projects on recycling of post-consumer plastics for new electrical and electronic equipment and eco-design of smart mobile devices. this latter project, sustainablySMART, involves large companies, such as AT&S, and small enterprises exploring circular concepts for mobile ICT devices, such as Fairphone B.V., Circular Devices Oy, MicroPro Computers, and Speech Processing Solutions. The presentation at SEMICON Europe mainly covers the findings from this H2020 project. Karsten supports the European Commission and stakeholders to implement the European EPREL database as part of the German National Top-Runner Initiative, financed by the Federal Ministry for Economic Affairs and Energy.