

How a circular economy can help enable 'green telco'

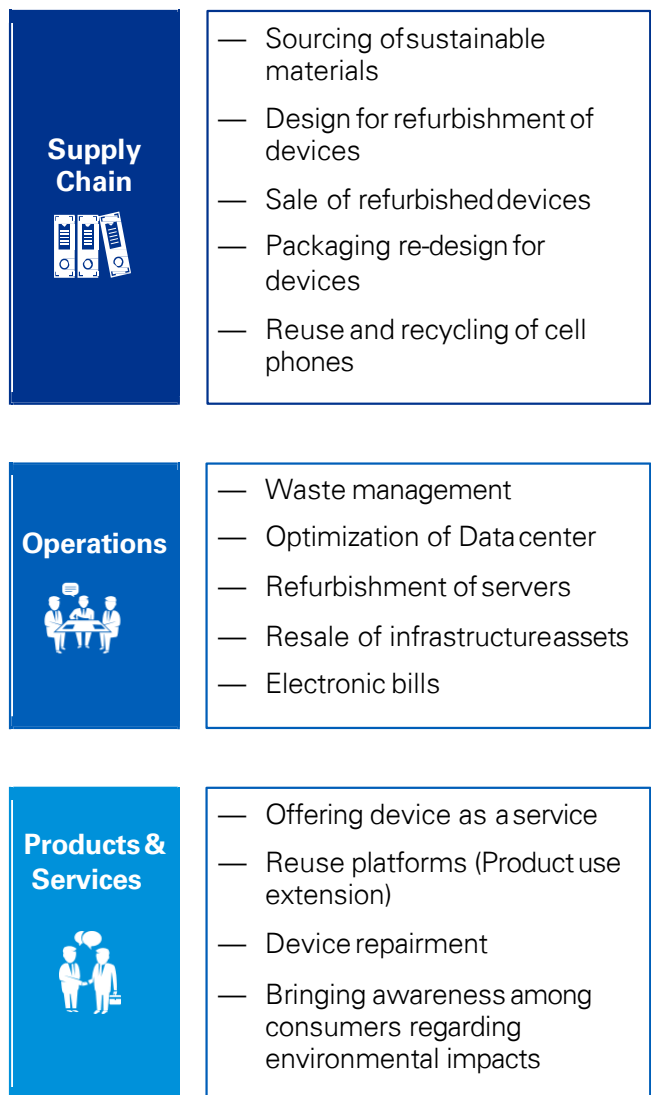
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The change that the COVID-19 pandemic brought into our lives has been transformational and the telecommunications sector has been playing a pivotal role in it. However, being the instrument of change at the global scale has caused an unprecedented demand for digital communications, which has forced the telecommunications sector to consume more energy than ever. The demand for products and services from telecommunications companies is likely to continue or even increase in the future, which makes it crucial for them to prioritise sustainability. The pressure on Telcos until now to make changes has been considerably low as they account for less than 1 percent of the global greenhouse gas emissions.ⁱ However, compared with other industries, the telecom industry lags when it comes to sustainability. Apart from carbon emissions, waste is the second major factor contributing to a telecom company's footprint. Being resource intensive, telcos also have the responsibility to reduce waste streams connected to network infrastructure, e-waste from data centres, devices, and office waste.

This is where a circular economy can help telcos to achieve their sustainability targets. Circular economy, as a concept, emphasizes on preserving the value of products, materials, and resources for as long as possible by maximising the product life-cycle and minimising waste at the same time. Telcos across the world are adopting circular economy to meet their sustainability goals. For instance, a leading Spanish telco recycles 98 percent of its waste and reuses 4 million devices a year.ⁱⁱ In fact, this is not a sole instance, many telcos across the world are embracing circular economy to achieve their sustainability targets (see figure 1).

Figure 1: Key circular economy initiatives taken by Telcos



Source: KPMG Analysis

ⁱ "The Wireless Communications Industry and its Carbon Footprint", Azocleantech, September 2021.

ⁱⁱ Circular Economy, TelefonicaWebsite.

Enablers of circular economy fortelcos:

Technology has been a great enabler for sustainability since years. For instance, use of digital channels for customer experience has greatly reduced the use of paper bills. Similarly, the advent of new technologies such as Internet of Things (IoT) and blockchain has provided telcos with new opportunities to adopt circularity.

IoT, with the help of intelligent applications, enables the collection of ambient information from telecom equipment. Information is captured for properties such as location, condition, and availability of the equipment. The telco operator can have real-time information about an equipment's repair, refurbishment, recycling, and maintenance status.

Blockchain enables tracking and monitoring of incremental transactions and the source of the equipment/asset in an environment where participants do not trust each other. It enables secure recording and sharing of information such as operating parameters, location, or energy consumption of telecom equipment. Blockchain can align supply chains with telcos' circular economy through traceability and transparency. Alongside, it establishes the missing connection between products sold by original equipment manufacturers and product recovered by final processor to improve waste management.

Telecom circularity-as-a-service allows to offset the material footprint of a new device by recycling another device which is at the end-of-life stage of the product life cycle. For instance, a small fee is added to the purchase price of a new phone, which is then used to collect an end-of-life phone in a developing country through small phone repair shops. The collected devices are then shipped to a facility where they can be recycled and made fit for reuse or are recycled. This service offers an introduction into circular procurement without the complicated procurement process.

What are the challenges in adopting circular economy?

Despite the immense growth in circular economy amongst several industries, its adoption does not come without challenges. The following section highlights the key restraining factors for telcos in adopting a circular economy.

- **Economic challenges:** Financial challenges, such as difficult access to capital, low incentive to invest, and high initial cost and low return on investment, impede circularity ambitions of telecom companies. Further, higher prices of sustainable materials across the telecom value chain also restrain circularity among telcos.
- **Complex supply chain:** Circularity requires significant coordination among companies across the telecom value chain. For instance, telecom companies are required to collaborate with third parties within the value chain to optimise reuse and recycling rates by improving waste reduction and separation, such as reusing parts for network maintenance. Not only this, there is a substantial amount of reverse logistics that needs to be taken care of to achieve circularity.
- **Lack of knowledge:** The lack of information on an integrated and holistic approach of the collaboration and specific circular economy practices are key shortcomings in the telco sector. For instance, product design or production for modular devices or products that enable individual repairment or replace is a major challenge in building circular economy initiatives.
- **Consumer behaviour:** The awareness and willingness among consumers to act on reducing their environmental footprint is quite varied and largely driven by personal choices. Lack of knowledge about recycling and reusing devices and data privacy concerns amongst consumers also impact their choices towards adopting circular economy initiatives.

What can telcos do to embrace and benefit from circular economy?

Circular economy contributes to the achievement of several of United Nation's Sustainable Development Goals (SDGs). While it is directly linked to SDG 12 on sustainable consumption and production, circular economy also helps achieve seven of the remaining 16 SDGs. However, this is not the only reason why telcos should embrace circular economy. Consumers are increasingly becoming aware of the environmental impact of their choices and willing to pay significantly more for brands that are sustainable and environmentally responsible.ⁱⁱⁱ For an industry that is highly consumer-facing, this is an opportunity not to be missed. KPMG professionals have identified few steps which telcos can adopt circular behaviors and have the potential to realise tangible benefits as well.

— **Evaluate existing business models to incorporate circularity:** Telcos must depart from a linear economy that uses an extractive approach. Instead, telcos can incorporate circularity in their business models to promote a regenerative and restorative economy. The below measures can be considered while switching to a circular business model:

- Strive to use circular alternatives to non-circular inputs
- Share telco assets to maximise efficiency and decrease costs
- Promote leasing instead of ownership to promote responsible recycling
- Extend product lifecycle with recovery and re-marketing capabilities
- Recover materials and downcycle equipment into lower value products

— **Find partnerships or alliances that enable circularity across the value chain:** While the telecom industry is inclined towards circularity in their operations, efforts need to be accelerated. The transition into a circular future will require significant partnerships across industries, along with key collaborations with NGOs, suppliers, investors, business customers and consumers to create a circular model across the value chain.

— **Set ambitious goals and track progress:** The need of the hour is to set milestones for goals targeted at reducing, reusing and recycling, and attaching these goals to timelines that challenge current business operations. This needs to be followed up with period performance reviews.

— **Market 'Circularity' as an integral part of sustainability strategy:** The strength of marketing can be used in support of green telco, to craft appealing stories on how one can contribute to recycling or reusing in an easier way. Fact-based communication on the environmental, social and economic benefits associated with circular procurement benefits in spreading awareness around circular economy initiatives. Further, tools can be developed to increase consumer awareness regarding the environmental impact of their choices.



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ⁱⁱⁱ 'Pursuing opportunities amid uncertainty: Global C&R M&A Outlook 2020', KPMG, January 2020; 'The Elusive Green Consumer', Harvard Business Review; August 2019; 'Meet the 2020 consumers driving change', IBM Institute of Business Value, 2020;