



Nokia CPE Refurbishment Service gives new life to Nokia broadband devices

Move from a linear to a circular business model to keep products and materials in use with a refurbishment service built on the Nokia Expert Advantage

White paper

Broadband service providers are facing new challenges as consumers, businesses, governments, and shareholders push for meeting the demands of a Zero Carbon Economy, overcoming supply-chain constraints, and achieving cost savings. Even when a service provider network meets the demands and expectations of the ultra-connected society and support for the Internet of Things (IoT) with connectivity and near-100 percent availability for a trillion devices, field returns of Customer Premise Equipment (CPE) are inevitable. Those field returns become waste in a linear business model.

This white paper describes how the Nokia CPE Refurbishment Service combines reverse logistics with the Nokia Expert Advantage to identify faulty and non-faulty units accurately and quickly. For non-faulty units, Nokia approved accessories and ancillary parts comprise a refurb unit and kit so units can be redeployed in the service provider network, completing the circular business model.

Contents

Introduction	3
Challenges associated with linear models	3
Moving to a circular business model	4
Nokia Expert Advantage underpins the circular business model	4
Nokia Expert Advantage provides deep domain knowledge	4
Best-in-class service-level agreement	4
Refurbishment service at work	5
Refurbishment service benefits	5
Conclusion	6
Acronyms	6

Introduction

Demand for bandwidth is growing as more people stream video, share content, connect on social media, work from home, and play online games. Expectations are also growing as consumers, businesses, governments, and shareholders push for:

- Meeting the demands and expectations of a Zero Carbon Economy.
- Overcoming supply-chain constraints.
- Achieving cost savings.

In a network that meets the demands and expectations of the ultra-connected society and supports the Internet of Things (IoT) with connectivity and near-100 percent availability for a trillion devices, field returns are inevitable. Those field returns become waste in a linear business model and hinder a service provider in reaching the aforementioned sustainability, supply chain and cost targets.

To better meet these challenges, service providers need a **circular business model** that accurately differentiates faulty and non-faulty units, reuses existing equipment wherever possible, and limits the use of new materials for sustainable value creation.

Nokia CPE Refurbishment Service is built upon the Nokia Expert Advantage. Nokia Expert Advantage uses Nokia Intellectual Property (IP), test specs, test equipment and software as part of the process to identify faulty and non-faulty units accurately. For non-faulty units, Nokia approved accessories and ancillary parts comprise a refurb unit and kit so devices can be redeployed in the service provider network, completing the circular business model.

Challenges associated with linear models

Linear business models follow **TMW** logic: **Take** natural resources to be used for the product, **make** the products for consumers that will eventually become **waste** as inevitable field returns occur. In a broadband network, field returns could be the result of many common scenarios that include:

- A residential move.
- A service not operating as expected (e.g. 5G not ready in the area).
- A perceived issue with the CPE.

But the end-result is always the same in the linear model: waste.

Determining whether a CPE is faulty or not can be challenging. Unless it is a unit that does not power up, the Nokia IP, software, test specifications and test equipment appropriate for the specific unit function are required to properly categorize faulty and non-faulty units. Inaccurate identification of faulty units leads to extra costs for shipping and accessories. There are also indirect costs related to customer dissatisfaction when a customer receives a faulty unit. Inaccurate identification of non-faulty units leads to working units getting scrapped, and associated cost of replacing a perfectly operational unit with a new unit.

Moving to a circular business model

The Nokia CPE Refurbishment Service shifts the approach from a linear to a circular business model. It is built upon the Nokia Expert Advantage, applying Nokia Intellectual Property (IP), software, test specs and test equipment to identify faulty and non-faulty units accurately and quickly. For non-faulty units, Nokia approved accessories and ancillary parts comprise the refurbishment kit to allow units to be redeployed in the service provider network, completing the circular business model.

Nokia Expert Advantage underpins the circular business model

The Nokia Expert Advantage underpinning the Nokia CPE Refurbishment service ensures:

- Installation or attachment of Nokia approved software components for refurbishment.
- Installation or attachment of Nokia approved hardware components (including accessories like power adapters, ultra-flat cables, etc.) in the refurbishment kit that are identical and/or qualified by Nokia.
- Timely supply of those hardware components to complete the refurbishment.
- Accurate identification of faulty and non-faulty materials using Nokia procedures and test equipment.
- Proper cleaning materials, packaging, and handling as part of the refurbishment process.
- Disposal of faulty units through Nokia approved recyclers.
- Warranty is provided on refurbished units.

Nokia Expert Advantage provides deep domain knowledge

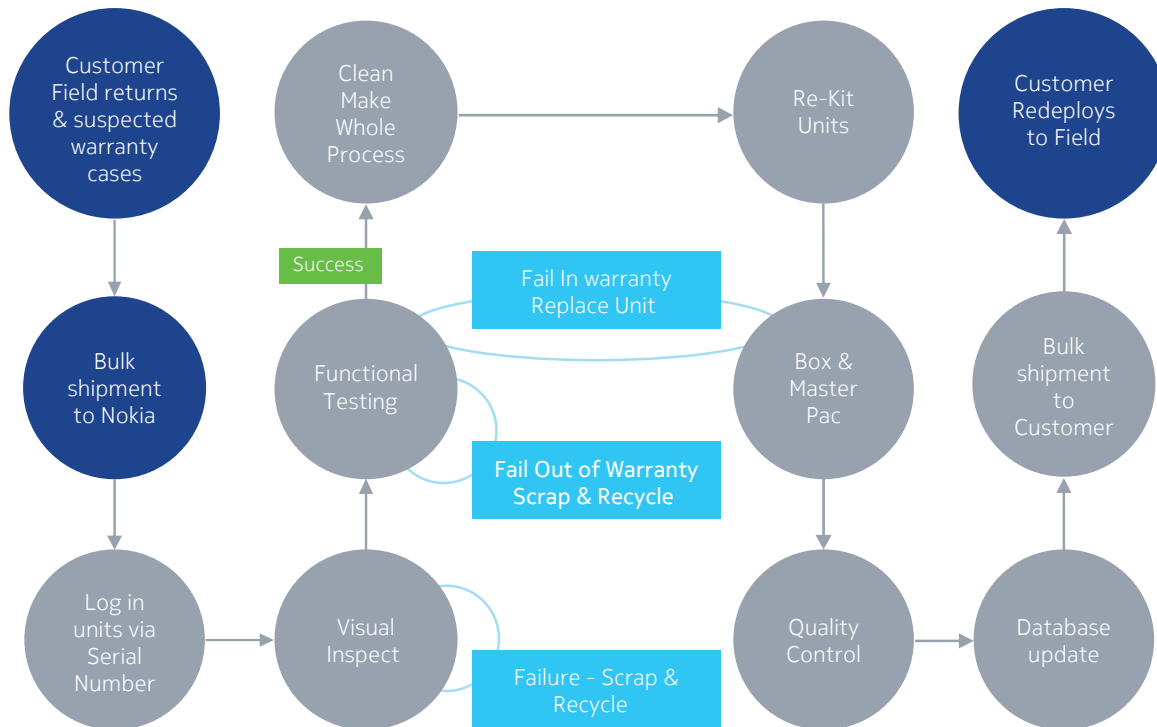
The Nokia Expert Advantage relies on deep domain knowledge of hundreds of Nokia CPE models. Therefore, Nokia is ideally positioned to develop the most cost-effective set of functional tests to identify faulty and non-faulty units along with the needed Original Equipment Manufacturer (OEM) accessories and ancillary parts to complete the refurbishment kit.

Best-in-class service-level agreement

Nokia provides a five (5) business day turn-around time (TAT) from the time the units enter the refurbishment center through to the time they are ready to leave. For a backlog or bulk shipment of units, Nokia will work together with the customer to manage a schedule to turn those units around efficiently. This fast TAT provides predictability and minimizes the number of spares the service provider must hold and manage.

Refurbishment service at work

Nokia CPE Refurbishment Service provides a cost-effective approach to properly test returned CPE units in a wide range of models. Where no fault is found, a unit is cosmetically refurbished, re-kitted, and made available for re-use.



Nokia CPE Refurbishment Service is proven (hundreds of thousands of units refurbished in the last three years) and has already contributed to service providers' Zero Carbon goals, addressed customer supply chain issues, and helped meet cost targets.

Refurbishment service benefits

Service providers purchasing the service can expect the following benefits.

Transformed business models.

- Shift from a linear to a circular business model to help meet demands and expectations of the Zero Carbon Economy.
- Increase the speed and accuracy of issue detection, root cause analysis, and resolution.
- Improve the efficiency, utilization, and work quality of operations and management teams.

Eliminate supply chain risks.

- Nokia guarantees accessories and ancillary parts are secured to achieve the agreed TAT.

Cost savings.

- Avoid extra costs from replacing units still in good working order.

Conclusion

Nokia continues to take advantage of circularity and is expanding the transition from linear to circular supply. We recognize that, in a finite world, the “take, make, and waste” approach is not sustainable. Therefore, the industrialization of refurbishment solutions is our corporate social responsibility (CSR).

A circular business model is sustainable, and the Nokia CPE Refurbishment Services built upon the Nokia Expert Advantage allows broadband service providers to adopt a circular business model for their field units. This transformation will allow service providers to meet growing expectation from consumers, businesses, governments, and shareholders as they push for meeting the demands and expectations of the Zero Carbon Economy, overcoming supply-chain constraints, and achieving cost savings.

Acronyms

CPE	Customer Premise Equipment
CSR	Corporate Social Responsibility
FF	Fault Found
IoT	Internet of Things
IP	Intellectual Property
NFF	No Fault Found
OEM	Original Equipment Manufacturer
SLA	Service-level agreement
TAT	Turn Around Time
TMW	Take, Make and Waste

About Nokia

We create the technology to connect the world. Powered by the research and innovation of Nokia Bell Labs, we serve communications service providers, governments, large enterprises and consumers, with the industry's most complete, end-to-end portfolio of products, services and licensing.

From the enabling infrastructure for 5G and the Internet of Things, to emerging applications in digital health, we are shaping the future of technology to transform the human experience. networks.nokia.com

Nokia is a registered trademark of Nokia Corporation. Other product and company names mentioned herein may be trademarks or trade names of their respective owners.

© 2022 Nokia

Nokia Oyj
Karaportti 3
FI-02610 Espoo, Finland
Tel. +358 (0) 10 44 88 000

Document code: CID211047