

Market Outlook

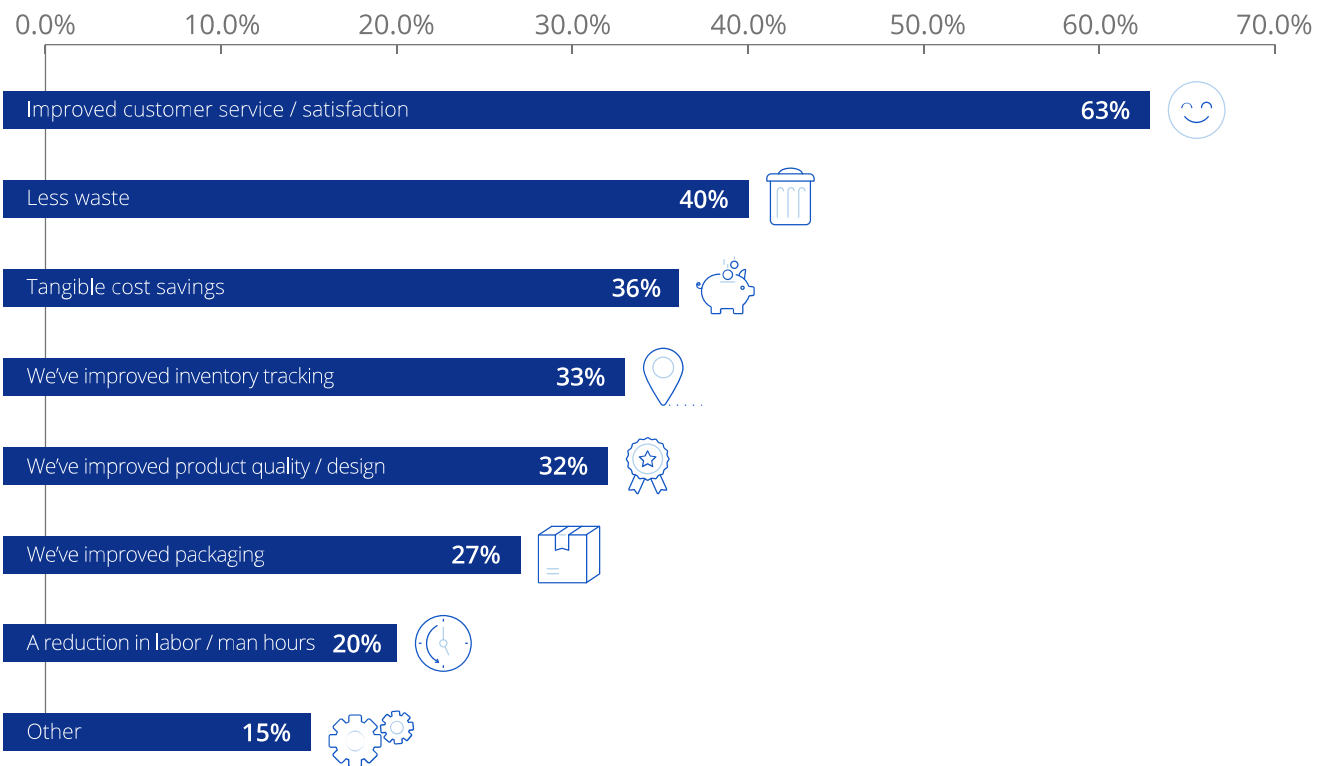
Reverse Logistics, Repair, and the
Secondday Market for Smartphones

What is Reverse Logistics & Repair?

Reverse Logistics & Repair is the process of retrieving product from its end destination and receiving, then processing, returned products with the intent of recovering value or ensuring proper disposition or disposal. Value recovery is accomplished through repair/refurbishment, remanufacturing, reclamation, and asset sales. If disposal is required, it's completed in compliance with R2 (Responsible Recycling) guidelines.

The Goal of Reverse Logistics

The mission of Reverse Logistics is to create and optimize efficient returns processes that save money for customers while reducing environmental impact. The graph below outlines the key goals for a reverse logistics strategy.



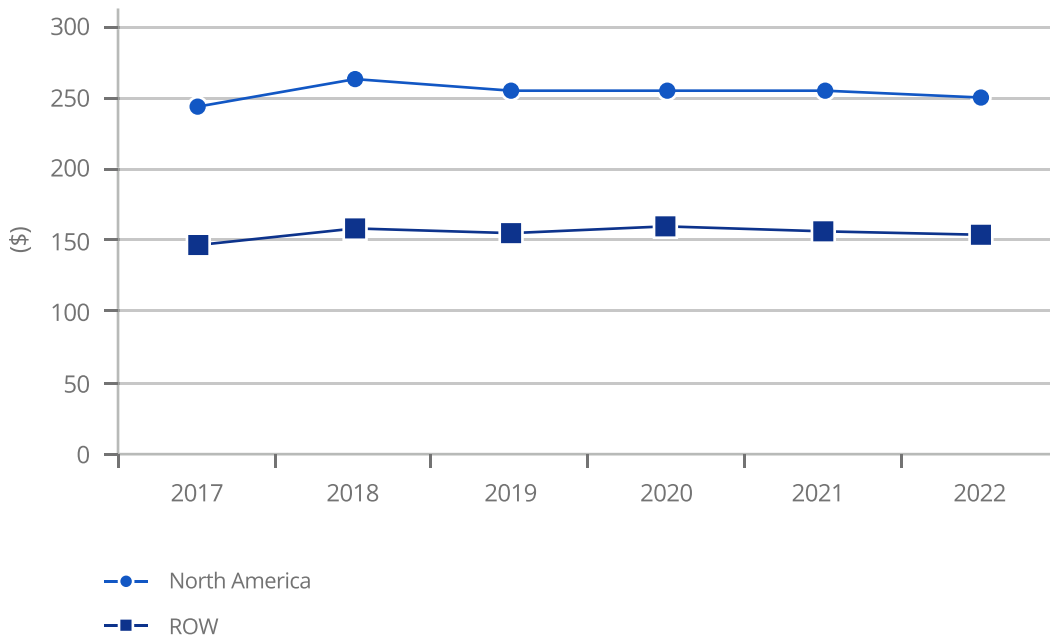
Note: United States; January 2018; 272 Respondents; subscribers to SCMR and members of RLA and WERC.
Source(s): SCMR; Reverse Logistics Association; Peerless Research Group; WERC; ID872979

The Market

A number of factors come into play for both the primary and secondary mobile device markets which will have a positive impact on the reverse logistics and repair market in the coming years.

The secondary market for mobile devices is projected to top \$57 billion by 2022, and is growing faster than the primary market (Source: IDC, B-Stock). While average selling prices (ASPs) for new devices continue to increase, overall secondary market ASPs will remain stable over the next coming years, with North America having a significantly higher value in secondary market ASPs, at ~\$250/device, than the rest of the world.

Worldwide Used Smartphone ASP; 2017 - 2022



Source: IDC, May 2018

By 2022, the size of the worldwide used smartphone market will double from what it was in 2017, with over 290 million units. This represents a CAGR of 14.9% from 2017 to 2022 (Source: IDC).

Of these used devices, customers will trade in 40-50% to their carrier to help lower the cost of their next purchase. This means carriers alone will receive approximately 117 to 146 million devices in the coming years to repair, refurbish and eventually resell.

Worldwide Used Smartphone Shipments, 2017-2022 (M)

	2017	2018	2019	2020	2021	2022	2017-2022 CAGR (%)
North America	31.1	38.4	46.2	56.3	65.6	75.2	15.85%
ROW	114.8	132.9	152.9	172.4	194.7	217.3	11.22%
Total	145.9	171.3	199.1	228.7	260.3	292.5	12.29%

Source: IDC, May 2018

Beyond secondary market size, other factors contributing to the growth of reverse logistics and repair include softening sales for new mobile devices and the evolving smartphone lifecycle.

Softening sales for new mobile devices

In Q4 2018, in the U.S., new smartphone sales were down by 28% year-over-year (Source: Strategy Analytics). This represents a new challenge for OEMs and Carriers to engage with consumers for new smartphone sales, or determine alternative products to offer consumers.

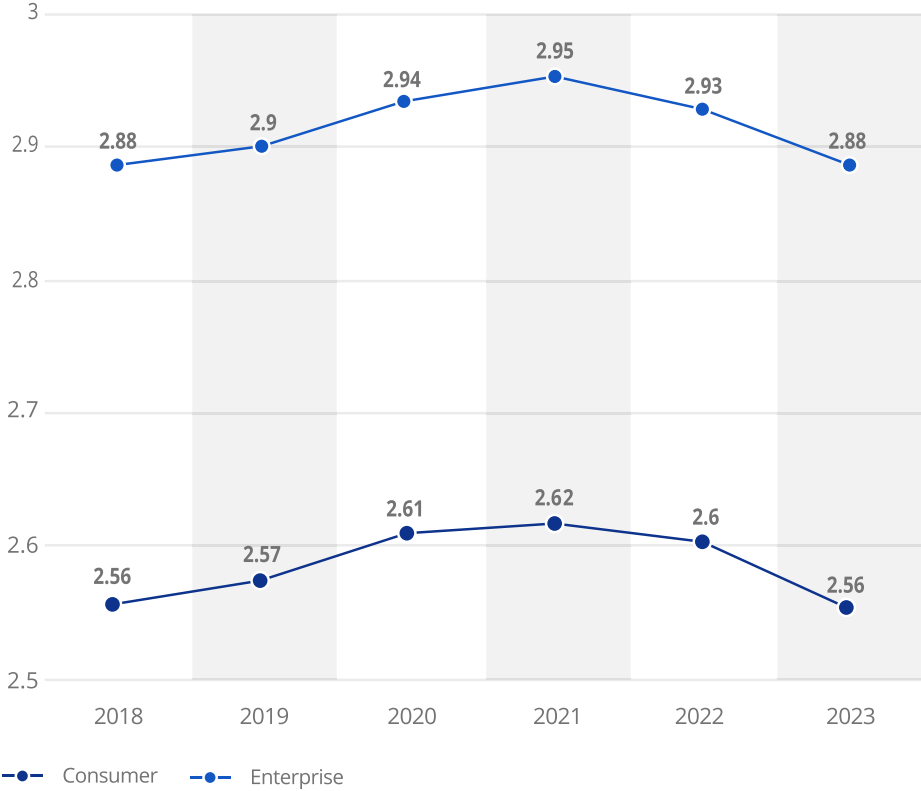
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Evolving Smartphone Lifecycle

Today, we are seeing some of the longest replacement cycles in the history of smartphones. This increased cycle time is project to rise marginally over the next few years, then plateau.

One key factor playing into the cycle time increase is the price of phones today. On the secondary market, these higher-priced devices will garner a higher return as well.

Average lifespan (replacement cycle length) of smartphones in the United States from 2013 to 2023 (in years)



Source: Daniel Research Group 2019