

# **North America Soft Robotics Market Size, Share, Trends & Analysis by Type (Crawling Robots, Edible Robots, Inflatable Robots, Soft Exoskeletons, Soft Grippers, Swimming Robots, Others), by Component (Hardware, Software), by End-User (Healthcare, Advanced Manufacturing, Food and Beverages, Logistics, Others) and Region, with Forecasts from 2025 to 2034.**

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## **Abstracts**

The North America Soft Robotics Market is poised for substantial growth between 2025 and 2034, driven by advancements in robotics, automation, and demand for human-friendly robotic systems. Soft robotics leverages compliant, flexible materials to mimic biological functions, allowing robots to perform delicate tasks with higher safety and adaptability compared to traditional rigid robots. These systems are increasingly being adopted in industries ranging from healthcare and food processing to logistics and manufacturing. Valued at USD XX.XX billion in 2025, the market is expected to expand at a CAGR of XX.XX%, reaching USD XX.XX billion by 2034.

## **Definition and Scope of Soft Robotics**

Soft Robotics refers to a class of robotic systems designed with flexible and deformable materials, inspired by biological organisms, to enable safe human interaction and complex motion. Applications span across crawling robots, inflatable and edible robots, soft exoskeletons, swimming robots, and soft grippers. These solutions are used in sectors such as healthcare for rehabilitation, advanced manufacturing for automation, food and beverages for safe handling, and logistics for efficient operations.

## Market Drivers

**Increasing Automation and Robotics Adoption:** Rising automation in manufacturing and logistics is boosting demand for adaptable and safe robotic solutions.

**Growth in Healthcare Applications:** Soft robotics technologies, such as exoskeletons and rehabilitation devices, are witnessing growing adoption for elderly care, physical therapy, and surgical support.

**Rising Demand in Food and Beverage Industry:** Soft grippers and inflatable robots provide safe handling of delicate food products, aligning with hygiene and quality standards.

**Advancements in Material Science and AI Integration:** Innovations in smart materials, sensors, and AI-driven control systems are enhancing soft robotics' performance and functionality.

## Market Restraints

**High Development and Production Costs:** Designing and manufacturing soft robots with advanced materials and control systems can be costly, limiting large-scale adoption.

**Technical Limitations:** Challenges in durability, power efficiency, and integration with existing automation systems may hinder market growth.

**Lack of Skilled Workforce:** Expertise in advanced robotics, AI, and material sciences is limited, posing barriers to widespread adoption.

## Opportunities

**Expansion of Wearable Robotics:** Increasing demand for soft exoskeletons in healthcare, defense, and industrial sectors offers strong growth potential.

**Integration with AI and IoT:** Combining soft robotics with AI, machine learning,

and IoT will enhance adaptability and intelligence, opening new applications.

Emerging Applications in Logistics and E-commerce: Automated soft robotic solutions for warehouse handling and last-mile delivery are gaining momentum.

Research and Commercialization of Edible and Biodegradable Robots: Innovations in edible and environmentally sustainable robots create niche opportunities in healthcare and environmental monitoring.

## Market Segmentation Analysis

### By Type

Crawling Robots

Edible Robots

Inflatable Robots

Soft Exoskeletons

Soft Grippers

Swimming Robots

Others

### By Component

Hardware

Software

### By End-User

Healthcare

Advanced Manufacturing

Food and Beverages

Logistics

Others

## Regional Analysis

**United States:** Leads the North America market, driven by strong investments in healthcare robotics, advanced manufacturing, and defense applications.

**Canada:** Emerging as a key market due to government initiatives in automation, healthcare innovation, and adoption of robotic technologies across industries.

**Mexico:** Growth supported by expansion in manufacturing, logistics, and food processing sectors, along with increasing interest in cost-effective automation solutions.

The North America Soft Robotics Market is set for robust growth as industries seek innovative robotic solutions for delicate, human-centric, and adaptive tasks. Supported by technological advancements, rising industrial automation, and strong healthcare demand, soft robotics will play a crucial role in transforming the region's automation and robotics landscape.

## Competitive Landscape

The North America Soft Robotics Market is highly competitive, with companies focusing on R&D, partnerships, and product innovation to strengthen market presence. Key players in the market include:

Soft Robotics Inc.

RightHand Robotics

ReWalk Robotics Ltd.

Bionik Laboratories Corp.

Ekso Bionics Holdings Inc.

ABB Ltd.

Festo AG & Co. KG

Yaskawa Electric Corporation  
KUKA AG  
Righthand Robotics

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