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Robotic Process Automation for Smartphone Manufacturing Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Robot Type (Cartesian, SCARA, Articulated, Delta, 6-Axis Robot, Redundant, Dual Arm and Parallel), By Component (Motor, Generators, Motor Controls, Automation Equipment and Power Transmission Equipment), By Organization Size (Small & Medium Enterprise and Large Enterprise), By Region & Competition, 2021-2031F

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Abstracts

The Global Robotic Process Automation for Smartphone Manufacturing Market is projected to expand from USD 5.83 Billion in 2025 to USD 19.57 Billion by 2031, registering a CAGR of 22.36%. This sector involves the implementation of automated systems and intelligent software bots to perform repetitive, rule-governed tasks, ranging from managing supply chain data to coordinating assembly lines. The market's growth is primarily fueled by the urgent need to reduce operational expenses and the demand for high precision to support increasingly compact device forms. Additionally, manufacturers are expediting the adoption of these technologies to improve production flexibility and navigate external economic challenges; for instance, the IPC reported that in 2025, 31% of electronics manufacturers funded optimization or automation strategies to offset the effects of increasing trade tariffs.

A major obstacle restricting the wider expansion of this market is the significant capital expenditure necessary to merge modern automation tools with aging manufacturing

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infrastructure. Numerous producers struggle to synchronize sophisticated robotic software with legacy enterprise resource planning systems, creating a high barrier to entry that delays full implementation and extends the time required to realize a return on investment.

Market Driver

The convergence of Industry 4.0 and Smart Factory technologies is reshaping the Global Robotic Process Automation for Smartphone Manufacturing Market by requiring the deployment of intelligent, networked systems. As smartphone designs grow more complex, manufacturers are shifting from standalone automation islands to fully integrated smart platforms where RPA bots oversee data exchanges across engineering, supply chain, and production units. This strategic transition toward high-tech infrastructure is highlighted by the investment habits of major industry players; for example, a Tech in Asia report from August 2025 titled 'Foxconn to invest $1b in US for AI, robotics' noted that the company authorized a $1 billion investment specifically to advance smart manufacturing and robotics. Such substantial capital commitments demonstrate the industry's dedication to building self-optimizing environments that utilize RPA for defect reduction and real-time decision-making.

Simultaneously, the drive for accelerated time-to-market and supply chain flexibility is positioning RPA as a crucial tool for buffering against trade volatility and external economic pressures. Manufacturers are using automation to swiftly reorganize assembly lines and adjust logistics in response to changing global policies, ensuring production schedules remain unbroken. The necessity of this adaptability is underscored by the National Association of Manufacturers' '2025 First Quarter Manufacturers? Outlook Survey' from March 2025, where 76.2% of manufacturers identified trade uncertainties as a primary challenge requiring flexible production systems. To address these needs and improve responsiveness, companies are localizing advanced facilities; as reported by Area Development in December 2025, Foxconn Technology Co. confirmed an investment exceeding $173 million to build a Kentucky facility that integrates AI and robotics into all production phases.

Market Challenge

The heavy capital expenditure required to align modern robotic process automation with legacy infrastructure presents a severe barrier to market growth. Smartphone manufacturers frequently rely on established enterprise resource planning frameworks that are fundamentally incompatible with newer automated software, requiring

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expensive and complex integration efforts. This financial burden goes beyond the initial purchase of robotic units to include significant costs for system retrofitting, specialized technical personnel, and extended downtime during the deployment phase. Consequently, this high barrier to entry disproportionately affects small and mid-sized manufacturing entities, compelling them to postpone modernization initiatives to preserve liquidity despite the potential for long-term efficiency gains.

This reluctance to commit to large-scale automation investments has led to measurable contractions within the wider electronics sector. Data from the Association for Advancing Automation in early 2025 indicated that robot orders from the electronics and semiconductor industries dropped by 37% year-over-year. This sharp decline illustrates the direct impact of these technical and financial hurdles, as producers delay or scale back automation projects when faced with the complexities of retrofitting aging production lines. Until the costs associated with interoperability are addressed, this capital-intensive integration process will likely continue to cause volatility and delay the widespread adoption of robotic processes across the smartphone manufacturing market.

Market Trends

The incorporation of Artificial Intelligence and Machine Learning is progressing beyond basic automation to encompass generative models that bolster operational resilience and quality control within smartphone production lines. Manufacturers are increasingly utilizing these technologies to detect subtle defects and optimize workflows in ways that static, rule-based bots cannot, effectively bridging the gap between adaptive intelligence and standard robotic process automation. This shift toward self-correcting systems is quantifiable; according to the '2025 State of Smart Manufacturing Report' by Rockwell Automation in June 2025, 95% of manufacturers have invested in or intend to invest in AI and machine learning technologies over the next five years, with quality control identified as the leading use case. This surge reflects a critical move toward production environments that autonomously maximize yields and minimize waste for complex mobile components.

At the same time, the focus on Sustainable and Green Manufacturing Practices is driving vendors to employ automation for rigorous energy management and environmental compliance. Robotic process automation is becoming essential for real-time monitoring of carbon footprints and orchestrating the circular economy, such as the precise disassembly and recycling of valuable materials from discarded devices. This commitment to eco-friendly operations is evident in the strategies of major OEMs;

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according to the '2025 Sustainability Report' by Samsung Electronics in June 2025, the company's Device eXperience Division, which oversees smartphone production, attained a 93.4% renewable energy transition rate across its global manufacturing sites by the end of 2024. Such initiatives highlight how automation is being leveraged not just for speed, but to meet aggressive carbon neutrality targets in high-volume electronics production.

Key Market Players

ABB Ltd.

Fanuc Corporation

KUKA AG

Yaskawa Electric Corporation

Universal Robots A/S

Kawasaki Heavy Industries Ltd.

Seiko Epson Corporation

Comau S.p.A.

Denso Wave Inc.

Nice Ltd.

Report Scope

In this report, the Global Robotic Process Automation for Smartphone Manufacturing Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Robotic Process Automation for Smartphone Manufacturing Market, By Robot Type

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Cartesian

SCARA

Articulated

Delta

6-Axis Robot

Redundant

Dual Arm

Parallel

Robotic Process Automation for Smartphone Manufacturing Market, By Component

Motor

Generators

Motor Controls

Automation Equipment

Power Transmission Equipment

Robotic Process Automation for Smartphone Manufacturing Market, By Organization Size

Small & Medium Enterprise

Large Enterprise

Robotic Process Automation for Smartphone Manufacturing Market, By Region

North America

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United States

Canada

Mexico

Europe

France

United Kingdom

Italy

Germany

Spain

Asia Pacific

China

India

Japan

Australia

South Korea

South America

Brazil

Argentina

Colombia

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Middle East & Africa

South Africa

Saudi Arabia

UAE

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global Robotic Process Automation for Smartphone Manufacturing Market.

Available Customizations:

Global Robotic Process Automation for Smartphone Manufacturing Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

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