

Biometrics - A Global Market Overview

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Report description:

Biometrics Market Trends and Outlook

Biometrics refers to the measurement and analysis of individuals' unique physical and behavioral characteristics for identity verification and authentication. The term originates from the Greek words "bios" (life) and "metrikos" (measure). Unlike traditional security methods like passwords or ID cards, which can be lost, forgotten, or stolen, biometrics offers a more secure and reliable solution by leveraging traits such as fingerprints, facial features, iris patterns, voice, vein structures, gait, or signature dynamics. These unique identifiers are digitally captured, encrypted, and stored in secure databases. During authentication, a live sample is matched against the stored template to verify identity. Once used mainly for criminal investigations, biometrics is now widely adopted across everyday applications like smartphone unlocking, airport immigration, digital banking, and surveillance systems. As concerns around identity theft and cybercrime grow, biometrics adds a vital layer of multi-factor authentication (MFA) across both public and private sectors.

Technologies such as iris, vein, and DNA-based recognition offer high accuracy and strong resistance to spoofing. Governments use biometrics for civil ID programs, welfare distribution, and voter authentication, while businesses apply it for employee access, customer onboarding, and fraud prevention. Integration with AI and IoT is further transforming how identities are verified and protected. The global biometrics market is valued at US\$44 billion in 2024 and is projected to grow at a CAGR of 14.7% to reach US\$100 billion by 2030. This growth is fueled by the increasing need for secure authentication across government, BFSI, consumer electronics, and security sectors. Innovations in AI, the rise of contactless authentication, and the proliferation of mobile and smart devices are accelerating adoption.

Biometric-as-a-Service (BaaS) is gaining popularity, especially among SMEs, due to its flexibility and cost-efficiency. AI and machine learning have significantly improved biometric system performance, enabling faster and more precise authentication. The use of multimodal and behavioral biometrics-which combine multiple traits for improved accuracy-is expanding across finance, healthcare, retail, and defense. As digital transformation continues and cyber threats evolve, biometric technologies will play an increasingly critical role in securing identities, facilitating access, and enabling seamless, secure interactions across all sectors.

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North America accounted for the largest share of around 34% in the global biometrics market in 2024, driven by robust technological infrastructure, early adoption across the healthcare, BFSI, and government sectors, and strong regulatory frameworks. High R&D investments, rising cybersecurity concerns, and the integration of AI and deep learning are accelerating the adoption of fingerprint and facial recognition for payments, identity verification, and access control. In contrast, Asia Pacific is projected to record the fastest growth rate at a CAGR of 16.7% during the forecast period 2024-2030, fueled by national ID initiatives, expanding digital infrastructure, and rising demand for secure authentication across transportation, logistics, and finance. Countries like China and India are leading adoption through large-scale government programs, mobile payment growth, and increasing smartphone penetration. The region's emphasis on developing smart cities, advancing digital transformation, and modernizing security is increasing the demand for AI-powered biometric solutions. With strong government backing and massive population-driven demand, Asia Pacific is poised to surpass North America in market share in the coming years.

Biometrics Market Analysis by Technology

Fingerprint segment dominates the global biometrics market by technology in 2024, capturing the largest share of 41.2%, owing to its widespread use in smartphones, consumer electronics, and commercial attendance systems. Its affordability, ease of integration, and technological advancements that improve speed and accuracy continue to drive demand. On the other hand, the iris recognition segment is expected to register the fastest CAGR of 16.6% from 2024 to 2030, owing to its exceptional accuracy and contactless functionality. The increasing use in access control, border security, and healthcare, as well as its applications in ATMs, government initiatives, and military intelligence, highlights its growing significance. Iris biometrics provide hygiene and secure verification without physical contact, making them particularly suitable for high-security and sensitive settings. As organizations increasingly adopt touchless, high-assurance identification methods, iris recognition is emerging as a key area of growth in the biometrics market.

Biometrics Market Analysis by Authentication Type

Single-Factor Authentication (SFA) segment is the largest market in the biometrics market, accounting for 59.9% of the share in 2024. Its prominence is driven by its simplicity, affordability, and wide usage in smartphones and consumer electronics. Popular technologies such as fingerprint and facial recognition are prevalent forms of SFA, particularly in the government, banking, and travel sectors. Its ease of implementation and rapid response times render it highly suitable for widespread adoption. Conversely, the Multi-Factor Authentication (MFA) segment is expected to record a significant growth rate at a CAGR of 17.2% between 2024 and 2030, driven by its enhanced security that integrates biometric features with passwords or tokens. The adoption of MFA is increasing in high-risk sectors like banking, healthcare, and government, driven by escalating cyber threats, regulatory requirements, and the need for strong data protection. Two-factor authentication leads the MFA segment, offering a strong balance between security and user-friendliness, making it more attractive to enterprises seeking advanced yet accessible security solutions.

Biometrics Market Analysis by Application

The civil identification segment held the largest share of the global biometrics market by application in 2024, accounting for 32% of the market. This dominance is driven by large-scale government-led initiatives such as national ID programs, voter registration, and digital identity verification schemes that require secure and reliable biometric authentication. The growing emphasis on identity verification, particularly in developing countries, continues to propel demand for biometric systems in civil identification. Meanwhile, the surveillance and monitoring segment is projected to witness the fastest growth rate, registering a robust CAGR of 18.4% during the forecast period 2024-2030. This growth is driven by the increasing adoption of biometric-based surveillance across smart cities, law enforcement, and border control applications, where facial and behavioral recognition technologies

enhance situational awareness and threat detection.

Biometrics Market Analysis by End-User

Government & public sector held the largest share of the global biometrics market by end-user with an estimated share of 28.9% in 2024, driven by widespread deployment in e-passports, border control, public safety, and welfare distribution systems. Government initiatives promoting national ID programs and secure citizen verification are propelling the adoption of biometric solutions. Biometrics enables accurate identification, reduces fraud, and enhances service efficiency. Conversely, the BFSI (Banking, Financial Services & Insurance) sector is projected to register the fastest growth with a CAGR of 18.6% through 2030. This growth is fueled by increasing demand for secure digital banking, fraud prevention, and seamless customer onboarding. As cyber threats escalate, banks are rapidly integrating biometric modalities like fingerprint, iris, and facial recognition for enhanced security and compliance. Biometric authentication ensures only authorized users gain access, significantly reducing the risk of identity theft and transactional fraud. Additionally, the increasing focus on digital transformation and data protection regulation is promoting the integration of biometrics within the BFSI sector.

Biometrics Market Report Scope

This global report on Biometrics analyzes the market based on technology, authentication type, application, and end-user for the period 2021-2030 with projections from 2024 to 2030 in terms of value in US\$. In addition to providing profiles of major companies operating in this space, the latest corporate and industrial developments have been covered to offer a clear panorama of how and where the market is progressing.

Key Metrics

Historical Period: 2021-2023

Base Year: 2024

Forecast Period: 2024-2030

Units: Value market in US\$

Companies Mentioned: 20+

Biometrics Market by Geographic Region

☐ North America (The United States, Canada, and Mexico)

☐ Europe (Germany, France, United Kingdom, Italy, Spain, and Rest of Europe)

☐ Asia-Pacific (Japan, China, India, South Korea, and Rest of Asia-Pacific)

☐ South America (Brazil, Argentina, and Rest of South America)

☐ Rest of World

Biometrics Market by Technology

☐ Fingerprint Recognition

☐ Facial Recognition

☐ Iris Recognition

☐ Voice Recognition

☐ Vein Recognition

☐ Palm Print Recognition

☐ Hand Geometry

☐ Signature Recognition

☐ Others (Including Gait Recognition, DNA Recognition, Olfactory Recognition (Odor Analysis),? Electroencephalograph (EEG), and others)

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Biometrics Market by Authentication Type

□ Single-Factor Authentication (SFA)

□ Multi-Factor Authentication (MFA)

Biometrics Market by Application

□ Civil Identification

□ Criminal Identification

□ Physical Access Control

□ Logical Access Control

□ Surveillance & Monitoring

□ Other Biometric Applications (Including consumer identification, transactional access control, Healthcare & Patient Identification and others)

Biometrics Market by End-user

□ Government & Public Sector

□ Security

□ Defense

□ Consumer Electronics

□ Healthcare

□ BFSI (Banking, Financial Services & Insurance)

□ Transportation, Travel & Logistics

□ Other End-Users (Including Automotive, Education & E-Learning, IT & Telecom, Retail & E-Commerce, and others)

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- ekey biometric systems GmbH
- Fingerprint Cards AB
- Fujitsu Limited
- IDEMIA France SAS
- Iris ID, Inc.
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