Facial Recognition Market Size, Share & Trends Analysis Report By Technology (2D, 3D, Facial Analytics), By Application (Access Control, Security & Surveillance), By End-use, By Region, And Segment Forecasts, 2021 - 2028

Report ID: 978-1-68038-311-9

Number of Pages: 92

Format: Electronic (PDF)

Historical Range: 2017 - 2019

Industry: Technology (/industry/technology)

Report Summary

Table of Contents

Segmentation

Methodology

Request a FREE Sample Copy

Report Overview

The global facial recognition market size was valued at USD 3.86 billion in 2020 and is expected to expand at a compound annual growth rate (CAGR) of 15.4% from 2021 to 2028. Technology is improving, evolving, and expanding at an explosive rate. Technologies such as biometrics are extensively used in order to enhance security (/industry-analysis/security-market). These are used across various applications, such as access control, attendance tracking, security and surveillance, and others. Biometrics are universal, unique, and measurable and thus can be used to provide security solutions. There are various types of biometrics used today, such as fingerprint, iris recognition, face recognition, speech recognition, and others. Facial recognition technology is a type of image recognition (/industry-analysis/image-recognition-market) technology that has gained wide acceptance over the years. This technology leverages a connected or digital camera (/industry-analysis/digital-camera-industry) to detect faces in the captured images and then quantify the features of the image to match against the templates stored in the database.

To learn more about this report, request a free sample copy (/industry-analysis/facial-recognition-market/request/rs2)

The facial recognition technology is very versatile in its usage and therefore is rapidly being by various end-users. For instance, in January 2020, NEC Corporation, an electronics and information technology company, announced that the company would offer facial recognition technology to the Mitsui Fudosan Co., Ltd, a Japan-based real-estate company. The offering by the company includes smart hospitality service, a solution using facial recognition technology. Further, the solution with the help of facial recognition technology would help the users with secure and safe stays at hotels. It would be used for various services, including making cashless payments, entertainment facilities, entering rooms, and check-in.

The increasing adoption of facial recognition technology across various applications is a driving force for market growth. Insecurity, the border authorities are using the technology to verify the traveler's identity, especially in airports. The law enforcement agencies are also using face recognition software to scan faces captured on the CCTV and find the targeted person. Another application where the technology has gained prominent adoption is smartphones. In smartphones, the software finds applications in unlocking the phone, signing into mobile apps, and in payment verification. For instance, in January, Samsung's Galaxy Note 8 and 9 smartphone models and iPhone X series are the most prevalent devices using facial recognition technology. Other smartphone devices such as OnePlus 6, Oppo Find X, MotoG6, Huawei Honor 7X, and LG G7 are using 2D technology and iris scanners for scanning the user's face. iPhone X series face ID consists of a depth sensor, dot projector, and an infrared camera to map 30,000 points on the user's face. From this data, the software develops an artificial 3D scan that is safe to unlock phones and authenticate digital payments (/industry-analysis/digital-payment-solutions-market) through Apple Pay.

The rising adoption of the technology by the law enforcement sector is substantially contributing the market growth. For instance, in January 2020, Moscow city announced the use of live facial recognition cameras provided by NtechLab, an artificial intelligence algorithms developer. The police authority in the city would be using facial recognition to search for suspects on a live camera. The software would notify police when a match is found. In another instance, MorphoTrust, a subsidiary of IDEMIA and one of the prominent vendors of biometry products and services in the U.S., has developed facial recognition systems for state and federal law enforcement agencies, state DMVs, and state departments, and airports.

Facial Recognition Market Trends

Facial recognition technology is a form of biometric artificial intelligence (AI) that executes identity verification by performing comparison among video frames or digital images and matching them with the facial images stored in a database based on facial features and skin texture. Its popularity has increased significantly in the recent times, as it is becoming a common trend in the digital era. The market for facial recognition technology is growing enormously as it is driven mostly by the need to increase productivity and minimize human interference. From its application in social media and mobile technology to security applications at airports, law enforcement, and targeted marketing campaigns, the deployment of facial recognition technology is inevitably part of our future. For instance, the travel industry has begun to explore the benefits of facial recognition. It speeds up the documentation and authentication process and helps with maintaining restricted access to sensitive areas and identifying security threats.

Favorable government initiatives are expected to impose a positive impact on industry growth. The establishment of subcommittees on machine learning and AI within the federal government has drawn the traction towards the AI industry. The facial recognition market is expected to witness significant growth in the BFSI sector on account of identification and verification applications as there is an increase in the adoption of facial recognition solutions in data analytics, fraud detection, cybersecurity, and database systems.

Facial recognition offers an automatic, quick, and seamless verification experience, as no physical contact is required, such as fingerprint or other security measures. Also, it doesn't deal with any key or ID card that can be stolen or lost. Facial recognition adds other conveniences, such as people accessing their wallets without pulling out credit cards or cash due to verification enabled through facial recognition.

Companies are taking strategic initiatives to expand their client portfolio and global reach in different verticals. For instance, in May 2020, FacePhi signed an agreement with the Banco de Corrientes SA, an Argentina-based financial entity. FacePhi will provide biometric recognition and authentication solutions, including SelphID and Selphi, to the Banco de Corrientes SA. This partnership will consolidate the company's position in the Argentine market. Several other verticals, such as airlines, manufacturing, retail, social events, and hospitality, among others, use facial recognition technologies for security and biometrics purposes along with several other use-cases, such as marketing. For instance, marketers are using this technology to understand customers' behavior by analyzing the users' expressions and their eye gaze. However, the use-cases of facial recognition and analysis are ever-expanding.

Report Coverage & Deliverables

Technology Insights

The 3D segment led the facial recognition market in 2020, accounting for over 36% share of the global revenue. The advent of advanced technologies such as cloud-based solutions and facial analytics is expected to boost the market growth. Facial analytics capabilities in facial recognition software allow users to understand where a face exists in a video or image along with the attributes of the face. For instance, Amazon Rekognition can analyze facial characteristics, including mood, visual geometry, eyes open or closed, and hair color. These attributes help customers organize millions of images using metadata tags. Facial analytics provides high accuracy and detection efficiency. It is therefore increasingly being used in education and research, retail, healthcare, and police services to determine the changed attributes such as gender, age, height, and other facial characteristics.

Further, the accuracy provided by 3D technology facial recognition systems encourages the deployment of these systems for public safety solutions, such as border protection and surveillance. 3D recognition systems are preferred over 2D systems in high-security spaces, such as airports. For instance, Chenega Europe Ltd, a wholly-owned subsidiary of Chenega Corporation, provides long-range LiDAR-enabled 3D facial recognition for identity acquisition and verification. The company specializes in professional services delivery focused on military and intelligence operations, and its 3D biometric surveillance technology is used by a government in the Middle East to enhance its airport surveillance capabilities.

Application Insights

The access control segment led the market in 2020, accounting for over 37% share of the global revenue. This is due to a rising number of companies focusing on enhancing their access control systems. For instance, in November 2019, Precise Biometrics, an authentication product provider, announced a new product enhancement. The company announced the integration of liveness detection capabilities into physical access control systems based on

facial recognition. Such enhancements are driving the adoption of the technology for access control systems, thereby generating higher revenues.

The security and surveillance segment is expected to record a significant CAGR over the forecast period due to the increased adoption of facial recognition technology in security and surveillance systems to have its implementation in high-security areas. For instance, law enforcement agencies are using security and surveillance systems to find missing children or to uncover criminals' faces. Also, business owners prefer installing facial recognition-based security systems to monitor people and identify their faces when they arrive at their stores. Furthermore, airports are increasingly deploying facial recognition technology at security checkpoints as people are less likely to commit crimes when they are being monitored through security systems. Thus, this technology deters the possibility of crime in public spaces.

End-use Insights

The retail and e-commerce segment dominated the market in 2020, accounting for over 21% share of the global revenue. The retail and e-commerce sector has been rapidly adopting face recognition technology in order to enhance operational efficiency and improve the in-store experience. Previously customers used to make payment amounts through various payment methods such as cash, card, or QR code. These payment methods involve diverse POS terminal systems and high staff involvement, but at the same time, the adoption of facial recognition technology for payment methods eliminates the need for various hardware. Shoppers can quickly pay the bill by scanning their faces on smart devices or at kiosks, which results in more secure, fast, and user-friendly payment. It also offers a unique authentication service that identifies, and recognizes faces from user databases and, with advancements in computer vision-based machine learning algorithms, can find the shopper's face easily from the entire database.

For instance, in June 2019, Alibaba Group Holding Ltd., a Chinese multinational technology company specializing in e-commerce and retail, and Bestore Co Ltd., a snack manufacturer entered into a partnership to integrate facial recognition technology with Alibaba Group account data. Bestore allows its customers the option of payment via Alibaba's face-scanning tablets and is also using other services offered by Alibaba group for efficient marketing. Shop assistance will be able to provide better customer service to users whose facial data is stored in the Bestore system, from the moment they enter the store. This partnership is expected to provide an increased sales rate and focused customer experience to the Bestore company.

The government sector is estimated to cater to moderate growth in the forecast period owing to demand in law enforcement and security. Owing to non-intrusive nature of the technology, it is also used for covert monitoring by governmental agencies. This technology is widely used in banking and finance to counter frauds, thereby catering to a substantial share in the market. This technology is also used in the retail and e-commerce segment for enhancing their sales. For instance, in June 2019, e-commerce companies Jingdong JD.com, and Alibaba.com announced that they would combine facial recognition technology with sales data. This will help the company to understand targeted sales behavior and better resource allocation.

Regional Insights

North America region dominated the market in 2020, accounting for over 37% share of the global revenue. The major factor contributing to the regional growth is the wide implementation of facial recognition technology in security and surveillance systems. In addition, the rising adoption of facial recognition technology in various departments such as homeland security, justice, defense, amongst others across the U.S. is boosting the market growth. For instance, MorphoTrust, a subsidiary of IDEMIA, is one of the most prominent vendors of biometry products and services in the U.S. It has developed facial recognition systems for state and federal law enforcement agencies, state DMVs, state departments, and airports. Key European markets of the U.K., France, and Germany are expected to drive the regional market considerably over the forecast period.

Key players have partnered and collaborated with retailers, distributors, and system integrators to market and sell their products to a large customer base. For instance, in May 2020, FacePhi signed an agreement with the Nubi Fintech, an Argentina-based financial services company, to incorporate FacePhi's biometric recognition technology into Nubi's services. Under the agreement, Nubi Fintech will integrate the SelphID biometric solution with its mobile application to enable secure authentication and a better user experience.

The Asia Pacific (APAC) region is expected to project the highest CAGR over the forecast period. Facial recognition technology is being widely used in developing countries such as India to solve investigation cases. For instance, in April 2018, face recognition was used by an Indian police force in New Delhi to identify children who have been lost or kidnapped. It was used on approximately 45,000 children throughout the city, out of which around 3000 were found missing. Several countries in the APAC region are taking initiatives to generate electronic id generation for individuals. Initiatives such as the e-KTP project in Indonesia and the UIDAI project in India are creating new opportunities for market penetration in the region.

Facial recognition technology is the process of digital mapping of an individual's facial geometry using biometrics. The facial geometry includes features, such as the nose's width, the distance between eyes, and the distance between the forehead and chin, among others. These measurements are then used to create a mathematical formula known as a facial signature. The stored signature is used to compare the physical structure of an individual's face to verify their identity. Facial recognition serves as a robust method for safeguarding data as it is used for authentication to unlock mobile devices. This technology has significantly enhanced business operations in many aspects, including access and authentication, identity fraud prevention, and accessibility to accounts and services. As a result, facial recognition platforms have become increasingly popular across several industry verticals, including banking & financial services, retail and e-commerce, automotive and transportation, media & entertainment, IT & telecom, government & public sector, and others. For instance, in airports, biometric self-boarding gates that use facial recognition technology to verify the identity of passengers by capturing their photos, have been deployed in several countries.

Key Companies & Market Share Insights

Vendors in the market are undertaking numerous strategic initiatives, such as acquisitions and mergers, collaboration, new product development and partnerships with other prominent players in the market. Continuous R&D to offer product differentiation is expected to be the major success factor for industry participants. For instance, companies such as Ayonix Corporation specializes in offering face recognition technology in sectors such as banking, hospitality, and retail, etc. Some vendors are also concentrating on collaboration and acquisitions to augment their product offerings thereby helping

them to gain a competitive edge in the market. For another instance, in April 2020, FacePhi signed an agreement with the Creditel (SOCUR S.A.), a Uruguayan financial entity. Under the agreement, Creditel will incorporate FacePhi biometric recognition solution SelphID in their security systems. The company has taken this strategic initiative to strengthen its presence in the Latin American market. Some of the prominent players operating in the global facial recognition market are:

- Aware, Inc.
- Ayonix Corporation
- Cognitec Systems GmbH
- FacePhi
- Fujitsu
- Gemalto NV
- IDEMIA
- NEC Corporation
- Onfido
- TECH5 SA

Facial Recognition Market Report Scope

Report Attribute	Details
Market size value in 2021	USD 4.45 billion
Revenue forecast in 2028	USD 12.11 billion
Growth Rate	CAGR of 15.4% from 2021 to 2028
Base year for estimation	2020
Historical data	2017 - 2019
Forecast period	2021 - 2028
Quantitative units	Revenue in USD million and CAGR from 2021 to 2028
Report coverage	Revenue forecast, company ranking, competitive landscape, growth factors, and trends
Segments covered	Technology, application, end-use, region
Regional scope	North America; Europe; Asia Pacific; South America; MEA
Country scope	U.S.; Canada; Mexico; Germany; U.K.; France; China; Japan; India; Brazil
Key companies profiled	Aware, Inc.; FacePhi.; NEC Corporation; IDEMIA; TECH5 SA; Onfido; Ayonix Corporation; Gemalto NV; Cognitec Systems GmbH; Fujitsu
Customization scope	Free report customization (equivalent up to 8 analysts working days) with purchase. Addition or alteration to country, regional & segment scope.
Pricing and purchase options	Avail customized purchase options to meet your exact research needs. Explore purchase options (/checkout/select-license/facial-recognition-market)

Segments Covered in the Report

This report forecasts revenue growth at global, regional, and country levels and provides an analysis of the latest industry trends in each of the sub-segments from 2017 to 2028. For this study, Grand View Research has segmented the global facial recognition market report based on technology, application, end-use, and region:

- **Technology Outlook (Revenue, USD Million, 2017 - 2028)**
  - 2D
  - 3D
  - Facial Analytics
- **Application Outlook (Revenue, USD Million, 2017 - 2028)**
  - Emotion Recognition
  - Attendance Tracking and Monitoring
  - Access Control
  - Security & Surveillance

- Others

- **End-use Outlook (Revenue, USD Million, 2017 - 2028)**
  - Retail & E-commerce
  - Media & Entertainment
  - BFSI
  - Automobile & Transportation
  - Telecom & IT
  - Government
  - Healthcare
  - Others
- **Regional Outlook (Revenue, USD Million, 2017 - 2028)**
  - North America
    - U.S.
    - Canada
    - Mexico
  - Europe
    - Germany
    - U.K.
    - France
  - Asia Pacific
    - China
    - Japan
    - India
  - South America
    - Brazil
  - Middle East and Africa (MEA)

Frequently Asked Questions About This Report

Which region held the largest facial recognition market share?

Who are the key players in facial recognition market?

What are the factors driving the facial recognition market?

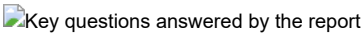
How big is the facial recognition market?

What is the facial recognition market growth?

Which technology segment led the facial recognition market?

Which application segment dominated the facial recognition market?

Which end use segment accounted for the facial recognition market share?



Request a Free Sample (/industry-analysis/facial-recognition-market/request/rs7)

(//verify.authorize.net/anetseal/?pid=ff9257e0-1958-4e73-81b1-b053479348d6&rurl=https%3A//www.grandviewresearch.com/industry-analysis/us-sexual-wellness-market)

Follow us (//www.facebook.com/GrandViewResearch) (//www.twitter.com/grandviewresearch) (//www.linkedin.com/company/grand-view-research)

Company

- Customer FAQ (/info/faqs)
- How To Order (/info/how-to-order)
- Privacy Policy (/info/privacy-policy)
- Terms Of Use (/info/terms-of-use)
- Sitemap (/html-sitemap)

Office Address

Grand View Research is registered in the State of California at Grand View Research, Inc. 201 Spear Street 1100, San Francisco, CA 94105, United States

+1-415-349-0058 (tel:1-415-349-0058) or 1-888-202-9519 (tel:1-888-202-9519)

sales@grandviewresearch.com (mailto:sales@grandviewresearch.com)

Business Hours

Our support available to help you 24 hours a day, five days a week.

Monday-Thursday :	9am to 5pm
Fridays:	9am to 4:30pm
Saturday & Sunday:	Closed