Facial Recognition Market Size, Share & Covid-19 Impact Analysis, By Component (Solutions, Services), By Technology (2D Facial Recognition, 3D Facial Recognition, Thermal Face Recognition, Skin Texture Analysis, and Others, By Application (Face Identification, Access Control, Security & Surveillance, and Others, By End-user (BFSI, Healthcare, Government & Defense, IT & Telecom, Retail & ecommerce), and Regional Forecast, 2020-2027

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HISTORICAL DATA: 2016-2018
NO OF PAGES: 180

Summary | Table of Content | Market Segmentation | Methodology | Infographics | Request Sample PDF

KEY MARKET INSIGHTS

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The global facial recognition market size stood at USD 4.35 billion in 2019 and is projected to reach USD 12.92 billion by 2027, exhibiting a CAGR of 14.8% during the forecast period.

The rising demand for advanced security and video surveillance systems among end-users to enhance security and safety is expected to drive market growth during the forecast period. Additionally, the rising adoption of the internet of things (IoT) and 5G technologies across the globe is anticipated to boost market demand during the forecast period. The rising investment in face recognition technology by key players is expected to propel the market size during the expected period. For instance, in May 2019, Megvii, a Chinese face-recognition startup, has invested around $750 Million to accelerate the use of face recognition technology across organizations.

The end-users are implementing face detection technology in their business to leverage various advantages such as fast processing nature, seamless integration, the automation of identification, and safety & security, among others. Key players in the market are adopting various marketing strategies such as new product launch to strengthen their market position. For instance, in February 2020, Veridium Ltd. launched its face recognition and behavioral biometric technology - "vFace" for mobile phones. This technology helps to track down the trespassers and enhance security & safety.

COVID-19 IMPACT ON MARKET

The rising crisis of the coronavirus has demanded the need for social distancing. Considering the required precautions of the coronavirus, many organizations and governments have started implementing work from home policy. COVID-19 pandemic is breaking the serious destruction in various sectors such as government & defense, law enforcement such as homeland security, retail & e-commerce, and BFSI, among others. The COVID-19 outbreak is likely to pull the market demand down further in the upcoming years. The ongoing crisis will compel consumers and organizations to shift to the online world. The use of face recognition solutions and other biometric technologies by end-users continues to grow and has found a new application in response to the COVID-19 pandemic. Proper management and implementation of face recognition technologies can help increase security and limit any physical contact. However, organizations must consider employees as well as consumers' privacy & security with the increasing use of contactless biometric technologies and facial recognition software to address the coronavirus-related challenges. Currently, the ongoing COVID-19 pandemic is affecting more than 150 countries in the world and has increased the importance of facial authentication systems. For instance, in 2020, Telepower Communication Co., Ltd., the world's leading smart solutions provider, has deployed a face recognition technology, as an alternative to fingerprint scanners, and for identifying person without any close contact.

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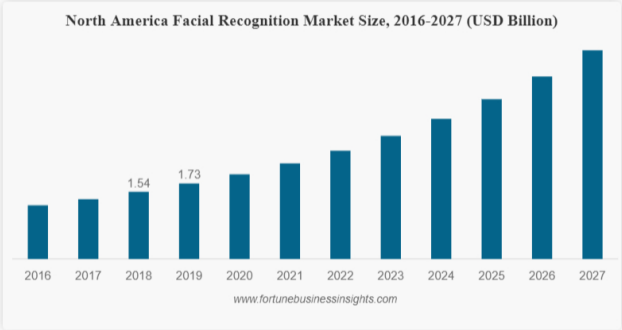

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Growing Adoption of Face Detection Systems based on Artificial Intelligence (AI) to Surge Demand

Rising adoption of face recognition systems based on AI platform among the enterprises is expected to be one of the key growth trends for the market. This system uses AI technology and machine learning (ML) algorithms to identify and verify a person from a digital image or video source. These technologies help to increase user engagement, identify human expressions, manage security systems, analyze customer behavior, and improve user safety. For instance, in June 2019, Vuzix, a U.S.-based supplier of smart and augmented reality glasses, launched a fully autonomous AI-powered face recognition system, iFalcon Face Control Mobile. The device is used to recognize faces in a crowd. Besides, major companies such as Amazon.com, Facebook, Inc., Microsoft Corporation, Google LLC, and others embraced AI-based face recognition applications to optimize user experience, performance, and security.

To cater to the rising demand for face detection solutions, key players in the market are focused on adopting various business strategies such as new product launches. For instance, in April 2020, THine Electronics, Inc., a Japanese semiconductor provider, launched an AI-based biometric face recognition and fever detection system for a safe work environment. This system is designed to detect body temperatures and screening people even while wearing face masks. This system can also be used at office buildings, shopping malls, train stations, and other places where large numbers of people assemble.

DRIVING FACTORS

Rising Demand for Advanced Video Surveillance Systems to Favor Growth

One of the emerging drivers for facial recognition market growth is the rising adoption of advanced video surveillance systems such as 360 security cameras, thermal security cameras, outdoor PTZ cameras, CCTV, and others by the end-users to enhance security and safety. Video surveillance systems are majorly used in applications such as industrial processes

monitoring, traffic management, and crime prevention. The increasing demand for video surveillance systems at commercial offices, airports, public transit vehicles, homes, and warehouses, among others is likely to spur the market demand.

Sectors including government and commercial offices are focused on adopting mobile video surveillance systems for protection against criminal activities and frauds are driving the market growth. According to the Maharashtra State Police, in October 2018, the Mumbai police used city-wide closed-circuit television camera (CCTV) footage for around 1,287 cases and solved 520 criminal cases. Furthermore, the government and law enforcement sectors are deploying and promoting face recognition systems to identify people in videos, photos, or in real-time. For instance, in January 2020, the government of Moscow has rolled out live face recognition cameras to provide security to the citizens. These cameras are provided by NtechLab company to help the police force search for suspects on a live camera.

RESTRAINING FACTORS

High Implementation Cost and Lack of Accuracy Proving to be a Inhibiting Factor for Market Growth

Currently, high implementation costs and lack of accuracy are likely to hamper market growth. The high cost related to deep learning engine (DLE), middleware for large scale surveillance (MILS) components, and smart surveillance engine (SSE), among others can limit the market growth. Additionally, the lack of investment and funds might be considered as one of the market restraints during the forecast period. This might slower the adoption of face detection solutions in the market. However, key market players such as FaceFirst, Inc., and others have initiated the usage of effective algorithms such as principal component analysis (PCA), fast fourier transforms (FFT), among others. This can provide cost-effective solutions and improve the accuracy of face recognition technology.

SEGMENTATION

By Component Analysis

Solution Segment to Hold High Market Share Backed by High Adoption of Facial Recognition Solutions

Based on the component, this market is segmented into services and solutions. The growth in the segment is owing to the increasing demand for smart face recognition solutions across the end-users. Smart face recognition solutions include face ID, CCTVs, smart wearable, and related software among others. In addition to this, the rising demand for face detection solutions integrated with augmented reality/virtual reality (AR/VR) technology among large enterprises is expected to drive the market growth. Market players such as FaceFirst, Inc., and Invixium Inc., among others are offering various solutions to increases their consumer base globally. For instance, in May 2020, Invixium Inc. launched its biometric solutions with face recognition such as IXM TITAN and TOUCH 2 biometric devices. The solution segment offers an optimal user experience, reliable recognition, comprehensive security, and combining convenience.

The services segment is expected to grow at a substantial rate owing to the increasing adoption of cost-effective face detection services among small and medium-sized enterprises (SMEs). Face recognition services such as cloud-based services provide excellent 3D face liveness detection and face recognition capabilities to the end-users. These features are anticipated to propel the market growth among the SMEs. Companies are focusing on offering face recognition related services. For instance, in September 2019, United Trust Bank (UTB) launched an app-based face recognition service for mortgage businesses to verify identities. This service can eliminate the human error associated with the hardcopy and mitigates fraud by using AI-powered face recognition technology.

By Technology Analysis

Increasing Adoption of 3D Face Recognition to Propel the Market Growth

Based on the study, the technology segment is categorized into 3D, 2D facial recognition, thermal face recognition, and skin texture analysis, among others. Among the technology, 2D facial recognition is expected to hold a moderate market share during the forecast period. Earlier, the face recognition software had to use a 2D image to match a similar image from the respective database. It required an individual to look directly at the camera with less variance in order to be effective and accurate. The inaccuracy in various conditions such as varying angles, expression, and environmental circumstances limited the usage of 2D face recognition technology. To overcome this challenge, companies in the market focused on developing advanced 3D facial authentication technology to provide better accuracy. In the 3D face recognition technology, real-time information about the shape of a face is captured by using 3D sensors. Additionally, the 3D face recognition technology is used to recognize objects across various view angles with high accuracy. The growth of the 3D face recognition segment can be attributed to the increasing demand for 3D-enabled devices among end-user industries. Key players are focused on various business strategies such as new product launches to enhance customer experience. For instance, in October 2018, IDEMIA introduced a robust face detection technology and video analytics, IDEMIA 3D Face. This is one of the company's access control solutions used to unlock smartphones easily and quickly.

The emerging technologies such as thermal face recognition, and skin texture analysis, among others are expected to favor market growth. A thermal camera is used to capture the heat emitted by an object of the surveillance and forms an image using IR radiation. Skin texture analysis uses visual information about a person's skin and analyzes its unique patterns, spots, and lines that appear on the skin. This technology has high detection efficiency and accuracy. Hence, it is majorly being used in government & police services, BFSI, education, and retail sectors, among others to determine age, gender, and other facial features of a suspect.

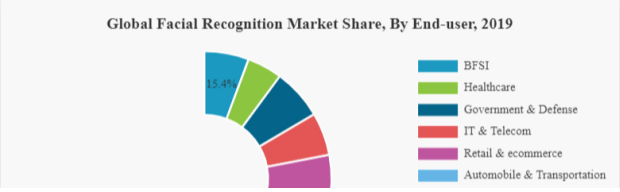
By Application Analysis

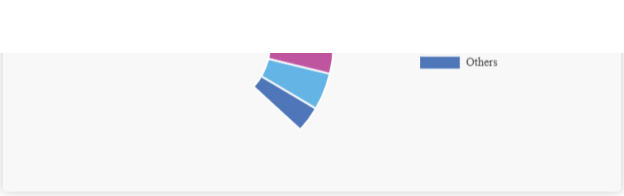
Rising Popularity Among Security & Surveillance Application to Gain Traction

The application segment is categorized into face identification, access control, security & surveillance, among others. Among the application segment, security & surveillance application is expected to cater to a high growth rate for the market during the forecast period. The growth in this segment is owing to the rising number of security concerns and the increasing adoption of internet protocol (IP) cameras. Face recognition solutions are frequently used for security purposes, thereby driving its adoption in security & surveillance application. Moreover, emerging smart city projects will create better opportunities for market players in the forthcoming years.

The access control application segment catered to the largest facial recognition market share owing to the rising adoption of access control solutions, and IoT & cloud computing platform based security systems. For instance, in November 2019, Precise Biometrics, a European authentication solutions supplier, integrated a passive liveness detection capability such as YOUNiQ face recognition technology to its physical access control system. Such developments are expected to boost the adoption of face detection technology for access control. The deployment of mobile-based access control and wider adoption of access control as a service (ACaaS) is expected to provide a favorable opportunity for market growth.

By End-user Analysis





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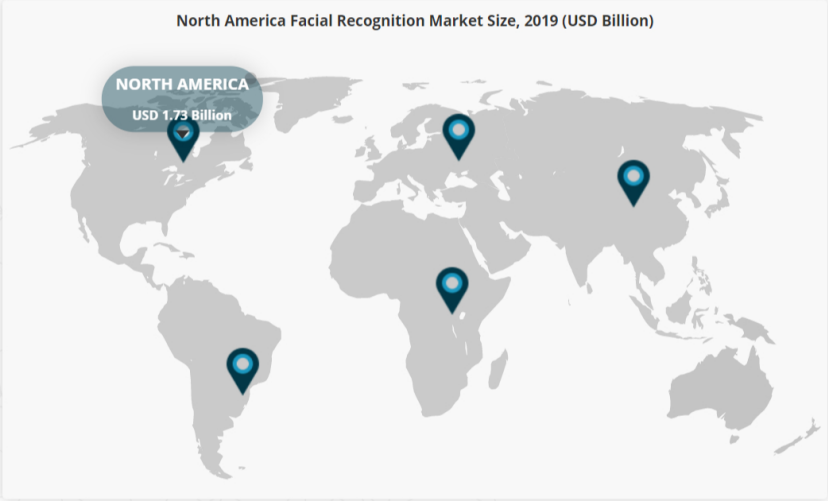
Increasing Adoption of Face Recognition Technologies Across Healthcare Sector to boost the Market Growth

Based on the end-user, the market is segmented into BFSI, healthcare, government & defense, IT & telecom, retail & ecommerce, automobile & transportation, among others. The government & defense sector is estimated to cater to the highest market share owing to increasing demand for recognition solutions in law enforcement and security agencies. These solutions are used to recognize and verify the suspected criminals, and cross-border monitoring, among others in real-time, while providing a secure environment. For instance, in April 2018, the face recognition systems were adopted by the Indian police in New Delhi, to identify lost or kidnapped children. It was used on more than 45,000 children out of whom around 3,000 children were found throughout the city.

This technology is extensively used in the BFSI sector to counter fraudulent transaction, therefore catering to a significant market share. This technology is used in the retail & ecommerce segment to improve retail customer experiences & sales and further helps the retailers to proactively prevent organized retail crimes. For instance, in June 2019, Chinese ecommerce companies such as Alibaba.com, and JD.com, among others integrated the facial authentication technology with the sales information. This technology helps to understand better resource allocation and targeted sales behavior. Therefore, the market is gaining traction in the retail & ecommerce sector.

The healthcare sector is expected to grow with the highest CAGR during the forecast period. The healthcare sector is adopting face recognition solutions rapidly to increase security and enhance their efficacy. IT & telecom, and automobile & transportation sectors, among others are estimated to grow at a considerable rate. The growth is attributable to factors such as the rising adoption of the solutions for various security-based applications such as face identification & monitoring, touch-less access controls, and forensic surveillance systems.

REGIONAL INSIGHTS



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Geographically, the global market is divided into five regions, including North America, Asia Pacific, Europe, Middle East & Africa, and Latin America.

The market in North America is expected to lead by capturing maximum share during the forecast period. The growth is attributable to factors such as rising infrastructural growth, and increasing adoption of face recognition solutions in various sectors. Key market players in this region such as Aware, Inc., FaceFirst, Inc., and Animetrics Inc., along with several start-ups, are offering face recognition solutions to cater to the rising needs across various sectors. In addition to this, the government of the U.S. and major players in the market are focusing on investing in startups and projects that likely to drive the adoption of face recognition technology. For instance, in November 2018, Ivideon, a U.S.-based cloud surveillance system provider, had invested around USD 8 million for cloud-based video surveillance. Besides, in February 2019, Jumio Corporation, a U.S.-based information technology, and services company, launched a new real-time, fully automated biometric verification solution, "Jumio Authentication". The solution uses identity proofing technology with 3D face authentication.

Asia Pacific market is expected to grow with the highest CAGR during the forecast period. The growth in this region is owing to the rising mobile transactions and government initiatives. China is witnessing a large number of mobile payment transactions, which has created a demand for biometric solutions. According to the China Internet Network Information Center (CNNIC), around 583.4 million people have preferred mobile payment transactions across the country in 2018 and 527 million users in 2017. Countries such as China, India, and Japan are the significantly emerging countries of the Asian economy, which are focused to supplement the market growth during the forecast period. Furthermore, key market players such as Shenxing Tech, and others are focusing on investing in biometric face recognition solutions to gain a competitive edge in the market. For instance, in January 2017, Shenxing Tech, a Beijing-based artificial intelligence (AI), and face detection firm have raised around RMB 100 Million (USD 14.4 Million) investments for the AI and face detection technology expansion.

Europe held the second largest market share in the market in 2018 owing to the presence of major players operating in this market such as Innovatrics, ID3 Technologies, Herta Security, among others. Additionally, the government is focused on investing in face recognition solutions. According to the European Union, in February 2020, the European government has invested around USD 22 billion for the development of advanced AI-based face detection systems and services.

The Middle East & Africa and Latin America are expected to witness growth at a considerable rate during the forecast period. The market growth is owing to the advent of technological advancement of immersive technologies such as AI, & cloud across these regions. The key players such as Techno Brain, and FindBiometrics, are investing in AI-based biometric authentication solutions. Mexico and Brazil are expected to have maximum market share in the Latin American market during the forecast period. For instance, in July 2019, Citibank, a U.S.-based financial services company, launched a biometric authentication solution for consumers in Latin America. Through this solution, a consumer can view balances and cash positions, manage users, and authorize payments on CitiDirect BE application.

KEY INDUSTRY PLAYERS

Leading Market Players Are Emphasizing on Expanding Product Portfolio to Strengthen Position

The key market players such as FaceFirst, Inc. and Animetrics Inc., among others, are focused on offering enhanced face recognition solutions, and services to achieve a competitive edge. In addition to this, various key giants such as NEC Corporation, Panasonic Corporation, and Aware Inc., among others are focusing on R&D investments in face recognition solutions to cater to the rising demand from the industries.

Panasonic Corporation is among one of the key market players that offers diverse electronics solutions and technologies for end-users in the consumer electronics, automotive, B2B, and housing businesses. The face recognition systems offered by the company are easy to deploy and operate. Additionally, it offers various benefits such as system expandability, system cost reduction, high precision, face search, and matching, among others. Panasonic Corporation continually delivers highly-integrated and innovative solutions to various end-user industries such as transportation, law enforcement, and educational institutions. The company is currently investing in the development of face recognition projects across the globe.

April 2018 – Panasonic Corporation launched its deep learning face recognition system, FacePRO, by using enhanced detection and extreme sensing technology to identify the person in real-time. This allowed the company to expand its face recognition portfolio worldwide.

LIST OF KEY COMPANIES PROFILED :

- NEC Corporation (Japan)
- FaceFirst, Inc. (U.S.)
- IntelliVision (U.S.)
- Polaris Sensor Technologies, Inc. (U.S.)
- Aware, Inc. (U.S.)
- Ayonix Corporation (Japan)
- Cognitec Systems GmbH (Germany)
- Herta Security (Spain)
- Thales Group (Gemalto NV) (Netherlands)
- Animetrics (U.S.)
- Daon (Ireland)
- ID3 Technologies (France)
- Idemia (France)

KEY INDUSTRY DEVELOPMENTS:

- **May 2020 –** NEC Corporation, a Japanese information technology company, launched a dual fever detection and face biometric system, NeoFace Thermal Express. It is designed for contactless access control applications to provide touch-less experience.
- **January 2018 –** Gemalto, a wholly-owned subsidiary of Thales Group, launched an Europay, MasterCard, and Visa (EMV) biometric dual interface payment card designed for contactless payments. This biometric authentication has replaced the PIN code to facilitate contactless transactions for the cardholder and ensure optimal user privacy.

REPORT COVERAGE

An Infographic Representation of Facial Recognition Market

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The facial recognition market report offers qualitative and quantitative insights on the facial recognition industry and detailed analysis of market size & growth rate for all possible segments in the market. The market is quantitatively analyzed from 2020 to 2027 to provide financial competency. The information gathered in the report has been taken from several primary and secondary sources.

Along with this, the report provides an elaborative study of market dynamics, emerging trends, opportunities, and competitive landscape. Key insights offered in the report are the adoption of the facial recognition market trends, recent industry developments such as partnerships, mergers & acquisitions, consolidated SWOT analysis of key players, business strategies of leading market players, macro and micro-economic indicators, and key industry trends.

REPORT SCOPE AND SEGMENTATION

ATTRIBUTE	DETAILS
Study Period	2016 - 2027
Base Year	2019
Forecast Period	2020 - 2027
Historical Period	2016 – 2018
Unit	Value (USD Billion)
Segmentation	**By Component** • Solutions • Services
	By Technology • 2D Facial Recognition

	• 3D Facial Recognition • Thermal Face Recognition • Skin Texture Analysis • Others (Holistic Matching, etc.)
	By Application • Face Identification • Access Control • Security & Surveillance • Others (Image Database Investigations, Identifying Genetic Disorders, etc.)
	By End-user • BFSI • Healthcare • Government & Defense • IT & Telecom • Retail & ecommerce • Automobile & Transportation • Others (Manufacturing, Media & Entertainment, etc.)
	By Region • North America (U.S. and Canada) • Europe (UK, Germany, France, Italy, Spain, Rest of Europe) • Asia Pacific (China, Japan, India, Southeast Asia, and the Rest of Asia Pacific) • The Middle East & Africa (South Africa, GCC and the Rest of the Middle East & Africa) • Latin America (Brazil, Mexico, and the Rest of Latin America)

FREQUENTLY ASKED QUESTIONS

How much is the global facial recognition market worth in 2019? −

Fortune Business Insights says that the market value stood at USD 4.35 billion in 2019.

How much will the market be worth in the future? +

At what compound annual growth rate (CAGR) will the market grow? +

Which component segment is expected to lead the market during the forecast period? +

What is one of the key market drivers? +

Who are the top companies in the market? +

Which end-user segment of the market is expected to grow significantly during the forecast period? +

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