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# DIGITAL IDENTITY TRACKER®

## CAPITAL FLOAT ON THE PATH TO VIDEO-BASED KYC IMPLEMENTATION

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## ACKNOWLEDGMENT

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# WHAT'S INSIDE

**F**inancial institutions (FIs) have been in search of ways to satisfy privacy and security regulations without causing potential customers to abandon what can be a complicated and lengthy application process since authentication became a requirement. Verification measures are in place for good reason, with know your customer (KYC) rules enacted with the Patriot Act in 2001 after 9/11 to help curb funding to terrorists and prevent money laundering activity. Allowing money laundering to occur right under their noses can lead to hefty fines for FIs that fail to meet KYC requirements.

Onboarding processes can require face-to-face meetings at branches, but this has become riskier during the pandemic. One [survey](#) of 20 of the largest retail banks in the United States found that 45 percent of accounts took more than two days to open and 20 percent required new customers to come into branch locations or complete the process over the telephone. Consumers have been forced to turn to digital banking channels in record numbers to avoid in-person interactions, however, leading banks to have to quickly process and verify greater volumes of online account applications.

FIs are adopting innovative, video-based KYC tools to confirm customers' identities as well as speed and simplify onboarding and prevent fraud. Video-based KYC methods [promise](#) to drive accuracy, halt inefficiencies and make onboarding processes more accessible, leading to less application abandonment. Video-based tools allow new customers to enroll remotely from the safety of their homes and also have the potential to [reach](#) an estimated 15 million unbanked U.S. consumers who do not hold accounts due to lack of trust or distance from branches.

## **Around the digital identity ecosystem**

AI-powered identity verification solutions provider Jumio recently [rolled out](#) a video verification solution for banks and other regulated businesses that are looking to onboard new customers completely online. U.K.-based FinTech Ebury adopted the tool to verify customers' identities digitally by comparing pictures of ID documents with selfies while recording the entire process. Jumio's chief revenue officer, Dean Hickman-Smith, said this feature can reduce operation costs up to 90 percent.

Forty million bank customers in Thailand are expected to register for digital identity authentication via the country's National Digital ID (NDID) program, which was recently [expanded](#) to include more financial institutions. The Central Bank of Thailand's assistant governor, Siritida Panomwon Na Ayudhya, expects that half of Thailand's 80 million deposit account holders will register.

The European Banking Authority (EBA) recently announced that banks in Europe will have more time to comply with Strong Customer Authentication (SCA), as the pandemic has [pushed](#) implementation to next fall. The deadline, originally set for September 2020, had already been extended to December 31 due to the rule's complexity, a lack of preparedness among banks and the impact it could have on consumers. FIs have requested more time to adapt, but the European Commission — the executive branch of the European Union — refused to delay SCA any further. The regulation mandates two-step digital identity verification processes for any online purchases greater than €30 (\$40 USD).

For more on these stories and other digital identity headlines, read the Tracker's News and Trends section (p. 9).

# EXECUTIVE INSIGHT

*Research has shown a substantial number of customers abandon their online applications because they are too complicated or too lengthy. How much time is saved with a video-based know your customer (KYC) network?*

"In a number of European, Latin American and Asian countries, regulations allow banks and other FIs to use video-based customer identification for KYC, enabling customers to remotely onboard instead of requiring them to physically visit a branch office.

We are in a time when people do not want to visit a bank branch to open up new accounts. With video-based KYC, onboarding time can be cut from days and hours to minutes."

**PHILIPP POINTNER**  
chief product officer at [Jumio](#)

## **Capital Float on deploying video-based KYC for smooth onboarding**

The global pandemic has strained businesses worldwide, particularly startups and small businesses with fewer resources. Video-based KYC has become a way to remotely and more smoothly onboard customers and make them less likely to abort the application process altogether. The Reserve Bank of India thankfully just approved the use of this due diligence process for the country's banks, lenders and other financial services providers a few months prior to the pandemic, though adoption has had its obstacles for companies such as [Capital Float](#), an India-based digital lender. In this month's Feature Story (p. 6), Prasad G R, operations head at Capital Float, describes the road to video-based KYC and how the solution can provide speedy and secure onboarding, meet regulatory requirements and ultimately help firms gain their clients' trust.

## **Deep Dive: How video-based KYC can reduce onboarding costs, unlock the unbanked**

Onboarding took a giant step forward with the introduction of using live video to confirm the identity of a potential customer during the application process. This method can speed and simplify new customer onboarding with the combination of biometric authentication and document verification. Offering video-based KYC has never been more critical as consumers seek digital avenues that support social distancing. This month's Deep Dive (p. 14) explores how video-based KYC can not only help meet regulations to ensure customers are who they say they are but also open doors for the nearly 1.7 billion consumers worldwide who lack bank accounts.

## FIVE FAST FACTS

57%

Share of consumers who interact digitally with their FIs and have increased their use of digital channels

64%

Portion of consumers who would be more comfortable providing personal information if they knew it would not be shared

24.1%

Portion of consumers who feel comfortable sharing facial scans with their current FIs

44%

Share of consumers who feel "less" or "somewhat less" comfortable providing their bank with biometric fingerprint scans

34%

Segment of consumers who are uncomfortable providing voice recognition



# Capital Float On The Path To Video- Based KYC Implementation



Developing a quick, seamless and secure onboarding process for FIs, lending startups and other financial services providers has long posed its trials. Such entities in India were granted relief on January 9 of this year, when the Reserve Bank of India (RBI) [officially](#) recognized the video-based customer identification process (V-CIP) as a legitimate, acceptable form of customer identification as part of the government's effort to drive digitization. The process [involves](#) capturing a user's live photo to compare alongside an official document, such as an Aadhaar card, which bears a unique, 12-digit ID number.

This authorization came just in the nick of time, too, as such technology would soon be an effective tool to safely verify users from their homes while the pandemic made it riskier for consumers to venture out in public. The crisis strained businesses worldwide, especially startups and small companies with less cash flow and resources, but video-based KYC presents an opportunity to reduce the number of potential customers who abort application processes they may see as lengthy and complicated.

India-based digital lender startup [Capital Float](#) witnessed a multitude of benefits from implementing video-based KYC to help onboard its small to mid-sized business (SMB) clients. The company was founded in 2013, and its mission is to address India's enormous credit problem by providing flexible and timely credit delivered via a seamless mobile experience. Capital Float had [provided](#) 500,000 clients with \$1.2 billion in funding as of April, though the virus's spread was greatly impacting India's FinTech space.

In a recent interview with PYMNTS, Prasad G R, operations head at Capital Float, detailed how the company uses solutions such as Aadhaar-based eKYC, which considers biometric details including fingerprints and eye scans along with dates of birth and addresses. Capital Float employs video-based customer identification as well, which has gone a long way in solving many perennial issues that banking, financial services and insurance (BFSI) companies tend to face, he said.

"Being paper- and people-intensive, the earlier process added to the customer acquisition cost and took considerable time to complete," Prasad said.

V-CIP's biggest advantage is the elimination of risks associated with secure transmission and storage of documents. Prasad also noted that geotagging — the addition of customers' locations to submitted videos — and the live photo feature combine to precisely confirm identities and weed out any fraudsters.

### **The roadmap to adopting video-based KYC**

Video-based identification can seamlessly onboard users once deployed, but getting to the point of deploying can have its obstacles for some companies. One of the initial challenges that came with video KYC's adoption was having to build and implement products that were compliant with V-CIP's requirements without relying on publicly available video solutions, Prasad explained.

"The other lingering challenge is the complex Aadhaar verification procedure, which we hope will be simplified in the future," he said.

The convenience of onboarding with video is key to attracting new customers, but it must also be trusted to invisibly secure sensitive data on the back end. Merely adopting digital technologies does not solve for

efficiency problems, Prasad noted. Adopting the right tools, such as video-based KYC, helps companies not only comply with regulations, reduce risk and strengthen processes but also build trust with customers by letting them know that their information is secure.

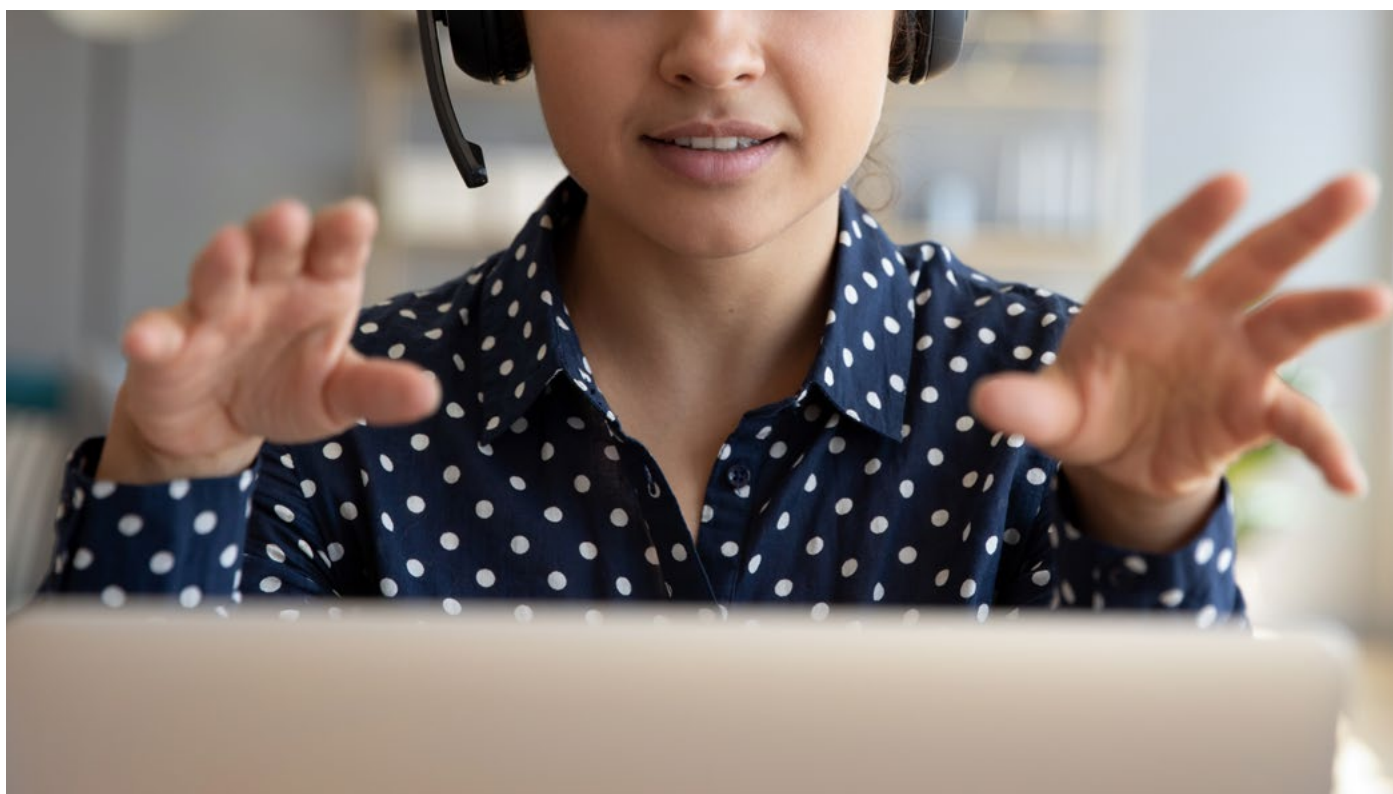
“For a BFSI business to derive the full benefits that the digital realm offers, it is important to design a flow that keeps the customer at the center while solving for risk management and compliance,” Prasad said.

Banks offer application programming interfaces (APIs) — a software intermediary that allows two applications to talk to each other — for nearly all of their services, for example. Verification of a customer’s bank account can

happen at the click of a button as a result, eliminating any manual interference that could lead to errors.

“Reliance on such solutions will be a win-win for both the customer and the business,” he said.

Clients that have access to these technologies will more easily be able to onboard with Capital Float, and the company will be more able to quickly lend aid to SMBs that need it most to make it through the pandemic.





# NEWS & TRENDS

## Digital identity, KYC and onboarding developments

### **How biometrics can assist with security, customer experiences in U.S. banks' tedious onboarding processes**

U.S. banks are impeding digital onboarding and missing out on the chance to improve customer experiences and security by not leveraging biometric technology, according to a new [survey](#) of 20 of the largest retail banks in the country. Surveyed banks offered a range of onboarding processes — some speedier than others: One onboarded customers in fewer than 10 clicks, while another required as many as 39 clicks.

Researchers opened online accounts at each bank and monitored digital onboarding processes from start to finish to examine their efficiency. Significant findings included the following: 65 percent of banks did not allow potential customers to establish accounts via mobile app, 50 percent required three forms of ID to open an online account, 20 percent did not allow a full online sign-up and required customers to come into a branch or complete the process over the telephone and 75 percent had four or more requirements for passwords.

These frictions could easily be resolved with tools such as facial recognition scans, which can outperform the human eye for accuracy of identity verification. Using biometrics in the onboarding process could also help reduce fraud and onboarding costs.

### **SCA deadline delayed to September 2021 in light of pandemic**

The European Banking Authority (EBA) has announced that it will once again [push](#) the deadline for Strong Customer Authentication (SCA) implementation, this time to September 2021, as a result of pandemic-related disruptions. The agency had already delayed the start date from September 2020 to December 31 due to its complex nature, a lack of readiness among banks and its potential impact on consumers. The European Commission has refused FI's requests for an even further delay in light of the pandemic, but this could result in merchants losing up to €90 billion (\$106 billion) in revenues in 2021, according to CMSPI, an independent global payments consultancy for merchants. The regulation requires two-step digital identity verification for any online purchase above the relatively low threshold of €30 (\$40 USD) — a process that CMSPI said will

make checkout more complicated for retailers who have already had a tough year.

### **Nearly two-thirds of applicants abandon applications with European FIs**

New [research](#) has shown that 63 percent of European consumers have abandoned financial application processes in the past year, a 23 percent increase since 2019. The study, based on a poll of 4,000 adults in Belgium, Finland, Germany, the Netherlands, Norway, Sweden and the United Kingdom in May and June, indicates that many of these consumers do not have the tolerance for identity verification frictions. Twenty-six percent of those surveyed found onboarding processes

to be difficult, 28 percent said they took too long and 69 percent said mobile-first providers are better than traditional providers. The study also revealed a growing expectation gap among age groups: Generation Z has little patience for anything other than fast digital onboarding experiences, for example, while older groups like millennials have more patience with inadequate processes.

### **How onboarding with digital KYC helps neobanks surpass traditional banks**

The world has shifted to the online realm at a rapid pace, with digital processes replacing manual ones in nearly every industry. Many consumers who were once



reluctant to adopt digital lifestyles have converted out of sheer necessity, but once consumers are acclimated to new digital or remote lifestyles, researchers [expect](#) some to increase their usage or switch permanently.

Consumers are fast becoming reliant on fully digital experiences. [Research](#) conducted to evaluate customer onboarding at European FIs found a widening gap between demand for all-digital experiences and bank processes that fail to meet customer needs or prevent fraud. Neobanks — digital-only banks without branches — outshone traditional banks in terms of providing seamless onboarding, including digital KYC. Neobanks met KYC requirements more smoothly with metadata and geolocation analyses, giving them an advantage over more traditional banks, which suffer from customer conversion flaws like email verification delays.

## Partnership news

### **Jumio debuts video-based KYC solution with early adopter UK FinTech Ebury**

AI-powered identity verification solutions provider Jumio has [launched](#) a video-based verification solution targeted toward FIs, FinTechs, digital wallets and cryptocurrency exchanges that are aiming to implement omnichannel onboarding processes. U.K.-based FinTech Ebury has already adopted the tool, which allows it to verify a customer's identity online by comparing pictures of an ID document with a selfie while recording the entire process, according to Ebury's head of product strategy and transformation, Martin Ferreira Subi.

Dean Hickman-Smith, Jumio's chief revenue officer, said companies can reduce operational costs by as much as 90 percent by leveraging video-based KYC, eliminating paper costs and simplifying archival processes. This is especially important as cybercriminals become more skilled at exploiting gaps and causing fraud.

Some countries, such as Germany, India and Spain, as well as some parts of Asia and Latin America allow video KYC only for identification processes by FIs. Other countries, like Canada, the U.K. and the U.S., allow for video-based KYC by FIs and verification of government-issued IDs with selfie/liveness detection — all technologies that Jumio offers.

### **Optus teams with Mastercard for biometric digital identity service**

New South Wales, Australia-based telecommunications company Optus has announced a new [partnership](#) with Mastercard to integrate the payment giant's secure, biometric digital identity service named "ID" with mobile, voice and retail channels for confirming user identities both on- and offline. The deal allows Optus to offer its 6 million My Optus mobile app users the option to create a digital identity for smoother purchases of new devices or services and to make account changes. The integration also provides Optus with the ability to replace paper-based ID verification processes with digital control over information sharing, according to the announcement. Mastercard and Optus said the alliance will improve customer data protection, mobile onboarding and transaction experiences.

## Facial recognition abroad

### Consumers' use of facial biometrics for credit applications on the rise in Brazil

Consumers' desire for more convenient, secure and touchless experiences during the pandemic is driving increased comfort with and willingness to use biometrics. Acesso Digital, a Sao Paulo, Brazil-based facial recognition and identification technology provider, had more than 5.2 million applicants use its facial recognition service "AcessoBio" to [validate](#) credit-granting transactions in September, according to the startup. This number represents its highest volume of users

since the start of the pandemic, climbing more than 59 percent. Acesso Digital said it was also able to prevent 22,000 fraud attempts in September — or one attempt every 51 seconds — and claimed to stop 144,946 fraud attempts from March through September, indicating that biometrics is an effective tool against rising fraud.

### China's use of facial recognition raises privacy, security concerns

Chinese authorities have been known to use CCTV surveillance cameras to [record](#) and identify citizens in public for years. Use of AI-driven cameras for facial recognition is now growing in the private sector, with property agents utilizing the technology to identify clients. This is raising concerns about privacy protection and identity theft. A property agent recently told a Chinese newspaper that real estate companies must be able to tell the difference between clients who responded to ads and those introduced by agents because agents receive fees for recruiting customers.

"Almost all real estate companies have facial recognition systems," the agent said. "If there wasn't facial recognition, there would be a lot of gray areas in our work."

The same newspaper conducted a poll showing that while 60 percent of respondents believe facial recognition helps cities stay safer, more than 80 percent would prefer that their captured data be deleted.

### 40 million Thai bank customers expected to register with National Digital ID platform

About 40 million bank customers in Thailand are expected to register for digital identity authentication under the country's National Digital ID (NDID) program, which was recently [expanded](#) to more financial



service providers. The Bank of Thailand, the nation's central bank, announced the expansion, which was done in collaboration with the Securities and Exchange Commission, the Office of the Insurance Commission, the Electronic Transactions Development Agency (ETDA) and the National Credit Bureau (NCB).

Siritida Panomwon Na Ayudhya, the central bank's assistant governor, expects half of the customers owning Thailand's 80 million deposit accounts to register for NDID digital ID authentication. Only 10 million customers have done so thus far, most of them from large commercial banks that use eKYC rules. Customers looking to register can be verified with facial recognition at a bank branch or via mobile banking app and can complete registration through the app.

### **PayBy launches AI-powered eKYC process leveraging facial recognition**

PayBy, a QR code-based, contactless mobile payment and money transfer app, recently [released](#) an AI-powered KYC solution in the United Arab Emirates. The paperless eKYC process takes half a minute to complete, eliminating the need for in-person verification, video calls or creation and maintenance of documents. UAE's Central Bank requires FIs and other companies to use KYC to determine customer risk, and anti-money laundering (AML) regulations mandate that KYC processes track financial data and activity. The solution is meant to replace the cumbersome manual tasks employees perform with more contactless and convenient methods, according to PayBy. The mobile-based process uses AI to perform a liveness check by detecting users' faces and comparing them to their Emirates IDs, creating a more seamless onboarding experience that meets the central bank's requirements.





# DEEP DIVE

## Why Video-Based KYC Is Key To Seamless, Cost-Effective FI Onboarding

The need for financial services providers to properly verify potential customers' identities took center stage in 2012 — the year HSBC, Europe's largest bank, was [fined](#) nearly \$2 billion for allowing \$881 million in laundered cash to pass through accounts linked to Mexican drug cartels. The London-based bank's executives avoided potential jail sentences, but it was a wake-up call for the industry, showing that such lapses could result in significant fees and criminal prosecution if basic due diligence is not followed.

Financial laws governing such transactions date back to 1970, when the Bank Secrecy Act (BSA) was [enacted](#), requiring FIs to report transactions of \$10,000 or more. KYC policies were introduced with the Patriot Act in 2001 following 9/11, intended to help stem the flow of funding to terrorists. KYC regulations require companies to prevent money laundering and protect themselves from being linked to criminal enterprises by accurately verifying their customers' identities.

The Financial Industry Regulatory Authority, a private corporation that acts as a self-regulatory organization, [adopted](#) new KYC rules in 2012 requiring its broker members to use "reasonable diligence" in the opening and maintenance of every account. Banks and other FIs must be certain that their clients are who they

claim to be and adhere to AML compliance — or be held accountable.

Video-based KYC is an effective digital technology that is being used increasingly to confirm customers' identities while also speeding and simplifying sign-up. This method allows banks and merchants to verify customers through video interviews and biometric authentication, which are checked against physical documents. Video KYC [promises](#) to reduce inefficiencies, boost accuracy and make the onboarding process seamless and compliant. Advocates of the strategy say it provides banks with an error-free way to onboard customers while reducing fraud and preventing application abandonment.

### Reducing FI onboarding time, costs

Video-based KYC enables FIs to safely onboard customers in a convenient, contactless way while the pandemic requires social distancing. Another key advantage is that video ID can reduce verification time from days to minutes. [Onboarding](#) corporate customers for business accounts, for example, can take even as long as one month, and these lengthy waits are quite costly for large FIs, amounting to more than \$500 million annually spent on due diligence. Cutting corners on these processes, however, also comes at a price, with

up to \$3.9 million annually going toward bank fines. The value of customers lost to lengthy KYC checks cannot be ignored, either, as they are expected to cost banks an estimated \$168.9 million by 2025. FIs that leverage video-based KYC can [reduce](#) customer onboarding costs by as much as 90 percent.

Speedy, secure onboarding is vital at a time when consumers have to use digital banking to prevent health risks. Online account openings increased by as much as 15 percent when social distancing mandates were implemented, and one [study](#) revealed that 73 percent of U.S. adult consumers are more likely to use digital banking in response to these mandates. Not just any digital banking platform will do, however: 38 percent of customers [consider](#) user experiences to be essential when

selecting online banking services. Video verification is one way to ensure smooth experiences and build trust.

The market for such tools is ramping up as well, with more customers enrolling online and demanding quick, secure onboarding processes. Mastercard is [launching](#) a video-based KYC service with biometric technology to that end under a recent partnership with a digital onboarding solutions provider. The companies report that the process can be completed 99 percent faster than traditional paper-based processes when one-on-one video is harnessed, especially when high volumes of KYC checks need to be performed.



### Banking for the unbanked

Video KYC also holds the potential to [reach](#) the nearly 1.7 billion consumers worldwide who lack bank accounts. The Federal Reserve estimates that 6 percent of U.S. adult consumers —about 15 million individuals — are unbanked. Technological advances could help FIs overcome the hurdles that keep unbanked individuals from joining financial networks, such as lack of trust in banking systems or geographic limits that prevent consumers from visiting branches. Many of the unbanked are convinced that obtaining an account is out of reach due to the scrutiny they must endure and how long the process can take.

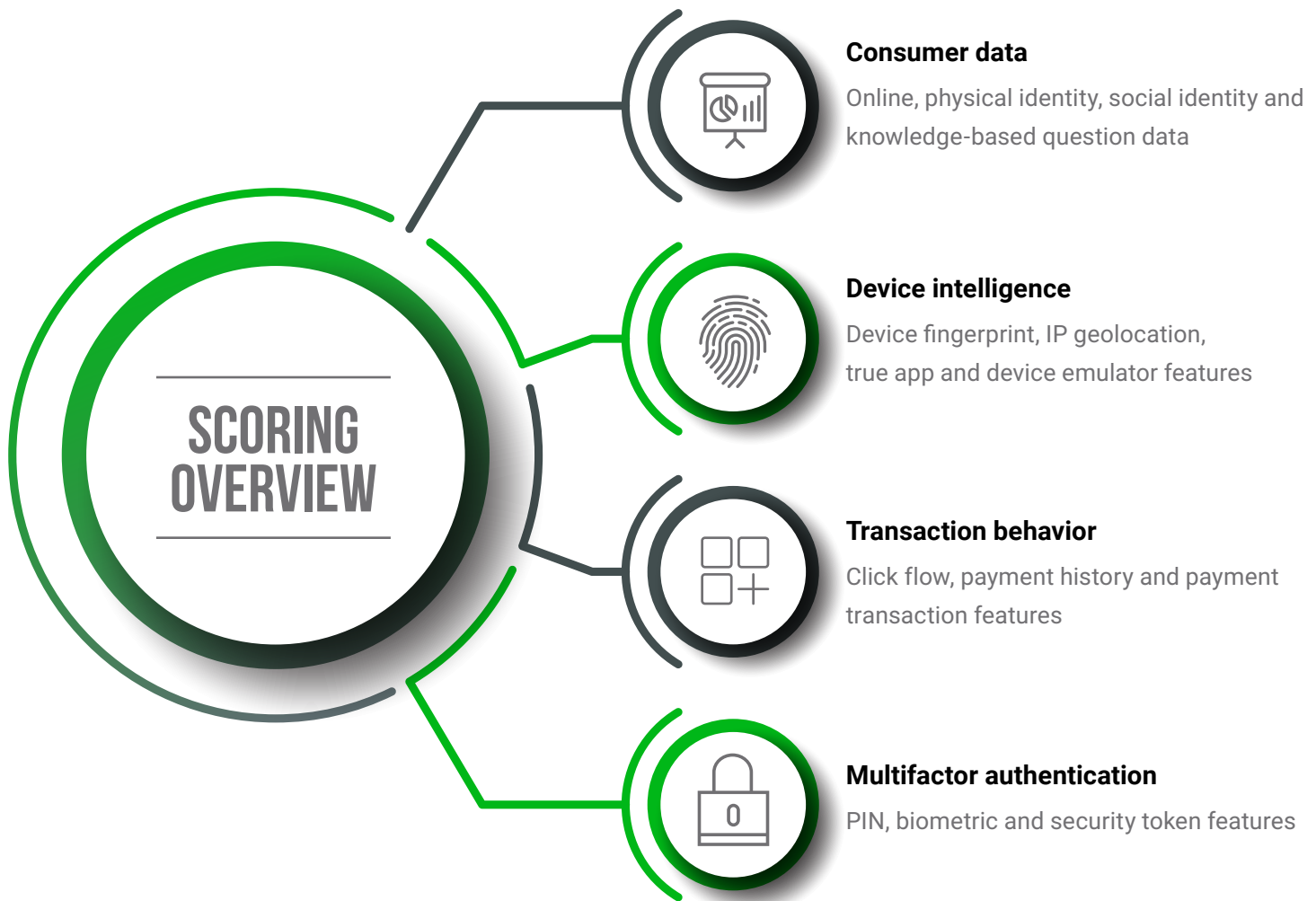
Video-based KYC can break down these barriers by verifying potential customers' identities remotely from their homes and can build trust with face-to-face interactions and easy-to-use processes. Banks can thus use these tools to reach areas where unbanked consumers lack nearby branches and familiarize them with the possibility of joining the banking economy. Three-quarters of underbanked households have access to mobile devices, affording banks the opportunity to reach these markets without letting physical barriers hold them back.



# METHODOLOGY

## Scoring overview

Companies featured in the Tracker Scorecard have been evaluated based on four primary criteria:



If you would like your company to be considered for inclusion in the Tracker's Scorecard or wish to have an existing listing reconsidered for an update, please head over to our [profile submission/update page](#).

## Consumer Data Scorecard – All players are listed in alphabetical order.



01 Systems is a software application and solution provider. Its products include Arabization, signature management, biometric solutions, enterprise content management and digital vouchers.

**Products:** Biometric authentication, enterprise content management, signature management

**Customer Focus:** Financial services

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓			✓		✓		



ABBYY provides document conversion, optical character recognition, data capture and linguistic software and services.

**Products:** Identity document recognition

**Customer Focus:** Business, information technology

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓				✓			



Acuant provides identity verification services. Its offerings include data capture, autofill, document authentication and facial recognition features.

**Products:** Autofill software, integration and hardware options, verification software

**Customer Focus:** Financial, government, healthcare, hospitality, security

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓				✓			



## Consumer Data Scorecard – All players are listed in alphabetical order.



Aeriandi offers voice security solutions. The company's services include call recording, archiving, Payment Card Industry-compliant phone payments, fraud detection and speech analytics.

**Products:** Call archive, call recording, payment card industry phone payments, phone fraud detection, speech analytics

**Customer Focus:** Banking, telecommunications, travel, utilities

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓						✓	



Agnito offers voice identification products that are used by government organizations worldwide. The company aims to help reduce crime, identify criminals and provide evidence for lawsuits. Agnitos' Voice ID product is also used by a number of other sectors.

**Products:** Criminal identification, voice biometrics

**Customer Focus:** Contact centers, enterprise security, financial services, governments, telecommunications

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓						✓	



AllWebID prevents online identity fraud and data breaches caused by stolen passwords. It secures its customers' networks by converting the login workflows of their web portals and software-as-a-service applications to support two-factor authentication. Users identities are verified either by matching a one-time use PIN code texted to the user's cellphone or by matching fingerprint templates in real time.

**Products:** Identity verification, password management

**Customer Focus:** Banking, education, healthcare

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓				✓		✓		

## Consumer Data Scorecard – All players are listed in alphabetical order.



Applied Recognition offers face detection, recognition and authentication technology for consumers, enterprises and application developers. The company serves a range of verticals, including financial services, IoT device manufacturers and software providers.

**Products:** Face recognition, photo tagging, Ver-ID software development kits

**Customer Focus:** eCommerce, enterprises, financial services, subscription services

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓				✓			



Aratek is a biometrics solution provider and a member of China's 863 program. Aratek provides fingerprint image processing, matching and searching software and hardware products, as well as middleware components.

**Products:** Fingerprint software systems, fingerprint tokenization, identity card fingerprint readers, scanners

**Customer Focus:** Finance, government, insurance, policy, power, social security, telecommunications, tobacco

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓					✓		



Arcanum Technology's nCode solution is a cutting-edge cypher algorithm that generates a series of unique tokenized system values to ensure customers' passcodes are never exposed. nCode reduces the complexity of passcodes by expanding their character sets to include alphanumeric characters, symbols, colors and key positions.

**Products:** nCode

**Customer Focus:** Banks, financial services organizations online merchants

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓								✓

## Consumer Data Scorecard – All players are listed in alphabetical order.



**AU10TIX**

AU10TIX is a multi-channel identification authentication and record generation solutions provider. The company develops and implements solutions that help automate the capture, authentication, validation and generation of digital records of identifying documents. AU10TIX is a subsidiary of ICTS International.

**Products:** Front-end solutions

**Customer Focus:** Airports, public services, regulated commercial services, secured facilities

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓				✓			



Auraya Systems is a biometric voice verification technology provider enabling customers and businesses to interact and engage with security and convenience. Auraya's biometric voice verification engine, known as ArmorVox, is speaker-adaptive and constantly learns about the customers' unique voices to improve security.

**Products:** ArmorVox

**Customer Focus:** Financial services, government, healthcare, retail, telecommunications

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓						✓	



Auth0 is a cloud service that provides a set of unified tools that instantly enable single sign-on and user management for any application, application programming interface or internet of things device. The company provides open-source software development kits for all popular platforms, operating systems, devices and programming languages. It also facilitates connections to various digital identity providers ranging from social and enterprise to custom username and password databases.

**Products:** Authentication, breached passwords, multifactor authentication

**Customer Focus:** Energy, financial services, healthcare, logistics, manufacturing, media, online services, retail, software

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓		✓		✓		✓		✓

## Consumer Data Scorecard – All players are listed in alphabetical order.



Authasas provides an authentication framework that integrates with Microsoft, Novell, VMware and Citrix environments and interfaces to all single sign-on vendors. The company offers biometrics, contact and contactless card technologies, mobile out-of-band, one-time passwords, software tokens, USB flashdrives, passphrase authentication and federated authentication.

**Products:** Authentication

**Customer Focus:** Financial services, government, healthcare

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓			✓		✓			✓



AuthenticID is an identity proofing provider that aims to deliver accuracy and improve processes, customer service and regulatory compliance for financial institutions, telecommunication companies and any businesses that are required to develop a customer identification program.

**Products:** Facial recognition, global document authentication

**Customer Focus:** All industries

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓				✓			



Authentik Systems produces a remote access biometric time and attendance system that enables users to create a biometric time stamp via personal biometric keys and browser-enabled cellphones.

**Products:** Remote biometric timecard system

**Customer Focus:** Agriculture, home cleaning, home health, HVAC, landscaping

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓					✓		

## Consumer Data Scorecard – All players are listed in alphabetical order.



**Products:** Authentication and payments, border management, citizen identification, defense, elections, fraud prevention, identity proofing, intelligence, investigation, law enforcement, visitor screening

**Customer Focus:** Business, government, healthcare, law

Aware is a global biometric software, services and solutions provider. Its modular software products include software development kits and subsystems that enable fingerprint, face and iris recognition. It also offers user interface applications for biometric enrollment and forensic analysis, software development kits for name matching and identity resolution, a biometric services platform and an automated biometric identification system.

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓				✓	✓	✓	



BioConnect is an authentication tools provider. BioConnect's core solutions include both physical and digital systems for enterprises of all sizes.

**Products:** Applications, hardware, identity platforms, software, terminals

**Customer Focus:** Data centers, education, enterprises, financial services, healthcare, retail, public sector

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓			✓	✓	✓	✓	



BIO-key is a fingerprint biometric identification, mobile credentialing and user identity verification solutions provider. BIO-key's products are software-based and compatible with various fingerprint readers.

**Products:** Fingerprint readers, software solutions

**Customer Focus:** Blood centers, education, enterprises, financial services, government, healthcare, retail

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓				✓			



## Consumer Data Scorecard – All players are listed in alphabetical order.



BioID is a cloud biometrics company. It offers face and voice recognition capabilities for any mobile device.

**Products:** Banking, eidentity, mobile payments, unified authentication

**Customer Focus:** Banking, government, retail

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓				✓		✓	



Biomatiques is an India-based manufacturer that provides compact iris scanner hardware and iris recognition software development kits, as well as custom casing design solutions to meet various requirements for its range of products.

**Products:** Identity management, security and access control, time and attendance

**Customer Focus:** Government, large businesses, medical

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓				✓			



Biomids is a biometric software security firm that provides authentication systems and technologies for enterprise users and developers. It allows customers to use facial recognition software in place of usernames and passwords to access a wide range of accounts.

**Products:** Biometric authentication and proctoring solutions, learning management systems

**Customer Focus:** Developers, education, enterprise, small business/personal

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓				✓			

## Consumer Data Scorecard – All players are listed in alphabetical order.



Bitium provides single sign-on and identity management for cloud-based, software-as-a-service applications. It allows end users to access all of their cloud software accounts using a single set of login credentials.

**Products:** Identity management, single sign-on

**Customer Focus:** Identity management, software

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓				✓				✓



Bluink is an enterprise security company focused on phone-as-a-token technology. Bluink enables multifactor authentication and single sign-on using smartphones as a key. Consumers can use Bluink Key to log in to other services with long, random passwords, one-time passwords or FIDO Universal Second Factor public key authentication, which eliminates passwords altogether.

**Products:** Financial services

**Customer Focus:** Enterprises

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓				✓				✓



B-Secur offers biometrics authentication solutions. The company's software uses patented electrocardiogram technology to read individuals' heartbeat patterns to verify their identities.

**Products:** Electrocardiogram biometrics

**Customer Focus:** Automotive, banking, finance, technology industries

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓					✓		

## Consumer Data Scorecard – All players are listed in alphabetical order.



CA Technologies' CA Advanced Authentication provides real-time protection for online and mobile applications. The solution can authenticate an employee, a partner or a contractor while providing a seamless login experience. It features multifactor authentication and risk-based methods such as device identification, geolocation and user activity.

**Products:** Advanced authentication, API security, identity management, payment security

**Customer Focus:** Enterprise, financial institutions

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓			✓	✓				✓



CBA provides fingerprint authentication modules and algorithms, fingerprint authentication chips, and USB keys. The company also supplies a fingerprint authentication system for mobile phone solutions to meet requirements of suppliers in various markets such as notebook PCs, PC/network security, door interlock, time information and entry systems, safes and internet/intranet authentication servers, among others.

**Products:** Algorithms, fingerprint sensors, modules, processors

**Customer Focus:** Internet/intranet authentication servers, mobile device suppliers, PC suppliers

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓					✓		



Centrify's identity-as-a-service solutions can be used to verify users, validate devices and put limits on access and privilege. It utilizes machine learning to discover risky user behaviors and apply conditional access, all without impacting user experience.

**Products:** Adaptive multifactor authentication, privileged access management, risk analytics, single sign-on

**Customer Focus:** Automotive, banking, defense, education, government, internet, manufacturing, retail, pharmaceuticals, telecommunications

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓				✓				✓

## Consumer Data Scorecard – All players are listed in alphabetical order.

### CHINCOTECH

Facial recognition software company Chincotech works with global governments and their agencies to combat issues including terrorism and immigration. The company provides 2D and 3D facial recognition algorithms and software solutions.

**Products:** Facial and general recognition

**Customer Focus:** Government

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓				✓			



Civic allows people to control their identity information by using blockchain identity verification technology to secure and protect personal information transfers. Civic aims to become a trusted third-party source for securing and verifying users' identities. It is building partnerships with banks, credit card companies, online lenders, wireless and cable providers, employee verification services and other institutions that rely on users' identities.

**Products:** Identity codes, identity theft protection, reusable know-your-customer solutions, secure identity platforms

**Customer Focus:** Blockchain companies

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓		✓		✓				✓



Confirm offers authentication services for driver's licenses and other IDs. The company's software is used by financial institutions, healthcare providers, insurance carriers, retailers, shared economy companies and on-demand service providers.

**Products:** Form filling services, identity authentication

**Customer Focus:** Financial institutions, healthcare, insurance, retail

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓							

## Consumer Data Scorecard – All players are listed in alphabetical order.



Crossmatch helps organizations solve their identity management challenges. Its enrollment and authentication solutions create, validate and manage identities for a range of government, law enforcement, financial institution, retail and commercial applications. Crossmatch's solutions are designed using biometric technologies and multifactor authentication software.

**Products:** Authentication, enrollment, mobile, software development kits

**Customer Focus:** Defense, enterprises, finance, government, law enforcement, hospitality, retail

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓				✓		✓		



Cryptomathic provides security software solutions to businesses from a variety of industries. Its main product, the Authenticator, utilizes tokenization to match security needs for services such as eBanking and eGovernment.

**Products:** Authentication, EMV, key management, public key infrastructure

**Customer Focus:** Banking, cloud, government, manufacturing, mobile, technology

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓				✓				✓



Cryptovision provides cryptographic security technologies to help mitigate the risk of task fraud. The company aims to serve the digital security needs of businesses in the public administration, health, automotive, finance and insurance, energy and information technology industries worldwide.

**Products:** Java card frameworks, public key infrastructure, smart card middleware

**Customer Focus:** Automotive, defense, financial, government, industry, retail

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
								✓



## Consumer Data Scorecard – All players are listed in alphabetical order.



Cryptsoft provides interoperable enterprise key management and encryption technology solutions. The company also offers key management interoperability protocol software development kits.

**Products:** Universal Second Factor, one-time password authentication tokens

**Customer Focus:** Security systems

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓				✓				✓



Daon is a biometric identity assurance software products and services provider focused on meeting the needs of governments and large commercial organizations worldwide. Daon supports customers and system integrators in building enterprise solutions.

**Products:** Biometrics, border management, employee credentialing, identity, immigration, mobile authentication, national identification

**Customer Focus:** Commercial enterprises, financial institutions, government

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓			✓	✓	✓	✓	✓



Dashlane offers products that are compatible with Mac, PC, iPhone, iPad, Android phones and tablets and Kindle Fire.

**Products:** Password manager, secure digital wallet

**Customer Focus:** Businesses, internet users

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓			✓	✓		✓		

## Consumer Data Scorecard – All players are listed in alphabetical order.



Diamond Fortress' solution ONYX is a software-based authentication solution that captures users' unique fingerprints via devices' cameras. The company's software library is offered via a software development kit and allows developers quick access to the technology.

**Products:** ONYX

**Customer Focus:** N/A

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓				✓			



DigiFlak offers business solutions that secure workers' digital keys, passwords and certificates in a separate hardware environment. The company manufactures Flak security USB dongles, licenses its technologies and offers subscriptions to services and third-party applications.

**Products:** Flak classic, Flak classic business edition

**Customer Focus:** Businesses, private users

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓								✓



Duo aims to protect organizations against data breaches by ensuring that only legitimate users and appropriate devices have access to sensitive data and applications.

**Products:** Devices, identity verification

**Customer Focus:** Education, financial, healthcare, legal, retail, technology

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓				✓				✓

## Consumer Data Scorecard – All players are listed in alphabetical order.



Early Warning provides payment and risk solutions to financial institutions, government entities and payment companies. Its identity and authentication offerings improve account opening, simplify and unify authentication through a single application programming interface and fight fraud with behavioral biometrics.

**Products:** Authentication, payment, regulatory solutions

**Customer Focus:** Financial institutions, government entities, payment companies

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓		✓	✓	✓				



eBureau is a predictive analytics and information solutions provider.

**Products:** Credit risk assessment, collections and recovery, fraud protection, marketing and lead management

**Customer Focus:** Automotive, financial services, higher education, insurance, retail, telecommunications, utilities

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓								



Entrust Datacard, formerly known as Datacard Group, offers digital identity solutions to financial institutions, governments and corporate enterprises that conduct highly secure transactions. Some of its solutions include central card issuance systems, passport and identification cards, security certificates and communication channels.

**Products:** Authentication, border control, employee identification, identity credential management, mobile authentication, Secure Sockets Layer certificates

**Customer Focus:** Corporate, education, financial, government, healthcare, retail, transit

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓			✓	✓	✓	✓		✓

## Consumer Data Scorecard – All players are listed in alphabetical order.



ePortID, a division of ePortation Inc., provides biometric identity verification solutions. ePortID delivers identity verification using palm vein scanning for a range of industries.

**Products:** Biometrics, ePortPass, palm vein scanners

**Customer Focus:** Banking, education, healthcare

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓					✓		



Equifax is a consumer, commercial and workforce information solutions provider that organizes, assimilates and analyzes data on consumers and businesses. Its identity authentication solution features a five-step process that works by asking "intelligent questions" related to applicants' histories..

**Products:** Identity authentication

**Customer Focus:** Banks, credit unions, financial institutions, government, insurance firms, retail, utilities

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓				✓		✓	✓	✓



EyeLock is an iris-based identity management technology company that develops systems for border control, logical access, global access control and identity management. It supports governments, businesses and consumers through its distributors and partners.

**Products:** Hardware and software solutions for iris identification

**Customer Focus:** Automotive, businesses, consumers, consumer products, financial services, government, healthcare

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓				✓			

## Consumer Data Scorecard – All players are listed in alphabetical order.



EyeVerify's biometric solution, Eyeprint ID, uses mobile devices' cameras to image- and pattern-match the blood vessels in the whites of the eye and other microfeatures in and around the eye.

**Products:** Eyeprint ID

**Customer Focus:** Device manufacturers, financial institutions, government agencies, healthcare services

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓				✓			✓



Facebanx has developed an integrated facial recognition technology that utilizes webcams, mobile phones and tablets. It uses cloud-based technology to allow multiple users unlimited access worldwide, manually or automatically. It is an identity verification solution in the registration, single sign-on and know-your-customer processes.

**Products:** Facial recognition, video chat, voice recognition

**Customer Focus:** Banking, gambling, insurance, local government, payments, police, security

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓				✓		✓	



FaceFirst is a real-time biometric face recognition software provider. The company's solution matches users' live images with their facial data stored in the system's database.

**Products:** Face recognition platform

**Customer Focus:** Airports, commercial security, gaming, law enforcement, retail, transportation

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓				✓			

## Consumer Data Scorecard – All players are listed in alphabetical order.



FacePhi provides facial recognition technology that utilizes the camera on a user's mobile device to take a selfie. That photo then becomes their method of identification and interaction with banks' mobile applications.

**Products:** Selphi, software development kits

**Customer Focus:** Financial institutions, government

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓				✓			



FICO is an analytics software company. Its solutions help businesses make better decisions through big data and mathematical algorithms to predict consumer behavior. FICO provides analytics software and tools used across multiple industries to manage risk, fight fraud, build more pro-table customer relationships, optimize operations and meet strict government regulations.

**Products:** Analytics, communications, fraud, security, scores

**Customer Focus:** Transportation, travel

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓		✓						



## FINGERPRINTS

Fingerprint Cards AB markets, develops and produces biometric components and technologies that verifies identities by matching individuals' fingerprints. The technologies consist of biometric sensors, processors, algorithms and modules that can be used separately or in combination with each other and can be implemented in volume products such as smart cards and mobile phones. The company's technologies can also be used in IT and internet security and access control.

**Products:** Area fingerprint sensors, swipe, touch

**Customer Focus:** Automotive industry, internet of things, smart cards

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓				✓			



## Consumer Data Scorecard – All players are listed in alphabetical order.



**Products:** Authentication, digital mobile wallet, issuance, platform, registration

**Customer Focus:** Banking, central government, education, local government, membership, organizations, legal applications, accounting

Folio harnesses advanced biometrics, artificial intelligence and smartphone technology to analyze and verify users' identities through documents, photo identification and physical attributes. Encrypted credentials can be certified and issued directly via the Folio app and they are accessible only to registered, biometrically paired users. Folio gives users complete control over their data.

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓					✓	✓		✓



**Products:** Access management, directory services, identity gateways, identity management, user managed access

**Customer Focus:** Communications, digital health, financial services, government, media, omnichannel retail

ForgeRock, an identity relationship management vendor, helps companies and governments build secure, customer-facing relationships across apps and devices. Its access management solution provides authentication possibilities with several out-of-the-box authentication modules to fit the businesses' needs, including device fingerprinting, one-time passwords and adaptive risk authentication.

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓				✓				✓



**Products:** Access management, cloud security, crypto management, data encryption, identity management

**Customer Focus:** Access security, eCommerce, financial services, government, identity security, machine-to-machine, mobile, identity security, retail, training, transportation

Gemalto develops software and other technologies for businesses and governments to help them with identity authentication and data protection. It delivers secure digital services for payments, enterprise security and the internet of things. Gemalto's authentication, identity management, data encryption and crypto management solutions enable organizations to protect sensitive information and ensure compliance.

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓	✓			✓	✓	✓		✓

## Consumer Data Scorecard – All players are listed in alphabetical order.



Gigya's customer identity management platform is designed to identify customers, aggregate data into customer profiles and produce personalized campaigns. The platform helps companies build better customer relationships and turn visitors into known, loyal and engaged customers.

**Products:** Customer identity management

**Customer Focus:** Brands, eCommerce, entertainment, leisure, media, organizations, publishing

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓	✓	✓				✓		✓



GlobalSign is an identity and security solutions provided aimed at helping businesses with digital processes and transactions.

**Products:** Access management, identity management, internet of things, public key infrastructure

**Customer Focus:** Businesses, cloud service providers, internet of things, large enterprises

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓								✓



Goodix is devoted to the research and development of human-computer interaction technologies, including chip design, software development and touchscreen solutions.

**Products:** Fingerprint sensors, tablets, touch controllers for mobile phones

**Customer Focus:** Smartphone and tablet manufacturers

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓					✓		

## Consumer Data Scorecard – All players are listed in alphabetical order.



GoTrust creates secure micro SDs and delivers hardware security for mobile devices using SDs and micro SDs GoTrust innovates powerful, fast and smart micro SD embedded chips and sophisticated supporting applications.

**Products:** Biometric virtual SDs, FIDO Universal Second Factor authenticators, iOS readers, passwordless solutions, secure micro SDs

**Customer Focus:** Consumers, enterprises, financial, government, military

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓				✓	✓		



HID Global produces products related to the creation, management, and use of secure identities. Unique identities can be confirmed and counterfeiters can be combated by using multifactor authentication provided by the company, such as biometrics, tokens or digital certificates.

**Products:** Access control, asset tracking, border protection, embedded solutions, identity management, secure transactions

**Customer Focus:** Banking, corporate, education, enterprise, financial, government, healthcare

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓			✓		✓		



HooYu is a global identity verification service. The company's software uses digital footprints, identity document authentication and facial biometrics to prove customers' identities.

**Products:** Identity verification

**Customer Focus:** eCommerce, peer-to-peer sites, regulated companies

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓	✓			✓			

## Consumer Data Scorecard – All players are listed in alphabetical order.



HYPR provides biometric authentication solutions that utilize existing cameras, fingerprint sensors and microphones on mobile devices.

**Products:** Biometric security software development kits, key password manager, tokenization

**Customer Focus:** All industries

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓				✓	✓	✓	✓



ID Analytics provides actionable insights into enterprises' credit and identity risks. It does this with a combination of proprietary data, patented analytics and up-to-the-minute consumer behavior insights from the ID Network, one of the nation's largest cross-industry data networks.

**Products:** Authentication, credit risk, fraud risk management, verification

**Customer Focus:** Automotive lending, communications, credit card companies, government, online lending, retail banking

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓			✓					



iDefend is a fraud prevention software provider offering biometrics-driven identity authentication for companies, governments and organizations. Solutions include video-based face, voice and lip verification.

**Products:** Biometric authentication

**Customer Focus:** eCommerce, financial, government, healthcare

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓			✓	✓		✓	

## Consumer Data Scorecard – All players are listed in alphabetical order.



IdentityMind provides identity-based risk management, fraud prevention, and anti-money laundering services for a variety of sectors.

**Products:** Anti-money laundering, merchant risk, online fraud prevention

**Customer Focus:** Acquiring banks, digital currency exchanges, financial institutions, online merchants, payment processors and gateways, payments services providers

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓	✓							



IDEMIA is a digital identity service provider for companies in the payments, gaming, communication and commerce space. IDEMIA is the result of the merger between embedded digital security provider Oberthur Technologies and identity and security solutions provider Safran Identity & Security.

**Products:** Access control

**Customer Focus:** Corporates, financial institutions, government, internet of things, mobile networks, retail, transportation authorities

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓					✓		



IDEX has developed advanced fingerprint imaging, recognition and authentication technology. The company sells sensors or licenses its intellectual property to global original equipment manufacturers for use in biometric products.

**Products:** Touch sensors

**Customer Focus:** Identification, internet of things, mobile, smart cards

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓					✓		✓

## Consumer Data Scorecard – All players are listed in alphabetical order.



IDology provides real-time technology solutions that verify the identities and ages of consumers who are not present.

**Products:** N/A

**Customer Focus:** Distance learning, eCommerce, financial services, gaming, healthcare, insurance, retail, tax, telecommunications

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓	✓		✓	✓				



ID R&D is a biometric solution provider focusing on the development of new biometric solutions to increase security and enhance user experience. The company has developed a suite of core biometric technologies for mobile login, chatbots and virtual assistants, and its solutions utilize various data points and biometric modalities – including behavioral, voice and facial recognition – to create frictionless biometric authentication in emerging communication channels.

**Products:** IDBehave, IDSquared, IDVoice, SafeChat 2.0

**Customer Focus:** United States

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓				✓		✓	



ImageWare Systems provides identity management solutions driven by biometrics. Its solutions provide multimodal biometric authentication using voice, fingerprint and facial recognition, and combine cloud and mobile technology to offer multifactor authentication for smartphone, tablet and desktop users.

**Products:** GoVerifyID, IWS Biometric Engine, IWS CloudID, IWS Credentialing, IWS Law Enforcement, Pillphone

**Customer Focus:** Enterprise, financial, healthcare, retail

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓				✓	✓	✓	



## Consumer Data Scorecard – All players are listed in alphabetical order.



Imprivata enables healthcare providers to access, communicate and transact patient information securely. The Imprivata platform addresses critical compliance and security challenges while improving productivity and patient experiences.

**Products:** Electronic medical record adoption, electronic prescriptions for controlled substances, multifactor authentication, secure communications, single sign-on, virtual desktop access

**Customer Focus:** Healthcare

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓						✓		✓



Inflection is a family history website and a people search engine. The company aggregates and makes available personal records. It ensures that the information it collects is done so with privacy in mind.

**Products:** Background checks, employment screening, identity checks, identity protection, identity verification, people search, privacy

**Customer Focus:** Trust and safety, identity protection, employment screening, identity verification, privacy, background checks and people search

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓	✓		✓		✓			



Innovatrics offers biometric technologies for identity management. Its biometric automated biometric identification system includes fingerprint identification, facial verification, facial identification and iris verification.

**Products:** Digital Onboarding Toolkit, Innovatrics ABIS, original equipment manufacturing, SmartFace

**Customer Focus:** All Industries

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓				✓	✓		

## Consumer Data Scorecard – All players are listed in alphabetical order.



Integrated Biometrics develops fingerprint scanners. The company's FBI-certified fingerprint sensors use a light-emitting sensor film, enabling them to work in direct sunlight on dry or moist fingers and resist abrasion.

**Products:** Fingerprint scanners

**Customer Focus:** Commercial, government

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓					✓		



Intercede offers cybersecurity services and specializes in identity, credential management and secure mobility services. Its MyID products manage identities and credentials, enabling organizations to create and assign trusted digital identities to employees, citizens and machines. It also allows secure access to services, facilities, information and networks.

**Products:** MyIDaaS, MyID CMS, MyID Platform, RapID

**Customer Focus:** Enterprises, governments, organizations

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓					✓		



Iritech provides iris biometric technology. The company offers compact iris camera modules and iris-based authentication solutions that can be integrated in any handheld device.

**Products:** Iris camera hardware, iris recognition software

**Customer Focus:** ATMs, education, government, healthcare, nonprofits, workforce management

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓				✓			

## Consumer Data Scorecard – All players are listed in alphabetical order.



Is It You provides mobile identity and facial verification. Its technology works in almost complete darkness, bright sunlight and with most poses – even while a user is holding the phone at waist level or to the side.

**Products:** Mobile face recognition

**Customer Focus:** Banks, enterprise, personal security

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓				✓			✓



Janrain created the first customer identity and access management solution. It also invented social login and is a founding member of the OpenID Foundation, which has established many of the digital authentication protocols used globally today. It continues to lead the customer identity and access management market, and over half of the world's connected users are on its Identity Cloud network.

**Products:** Identity management, security, social, social media

**Customer Focus:** Businesses

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓	✓	✓				✓		✓



Jumio provides identity verification and authentication solutions. The company utilizes proprietary computer vision technology and biometrics to verify users against their government-issued credentials in real time.

**Products:** Financial services, banking, gaming, telecommunications, sharing economy, travel

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓	✓				✓			

## Consumer Data Scorecard – All players are listed in alphabetical order.

### LastPass...

LastPass offers single sign-on and password management solutions. The company's offerings help customers increase security, maintain compliance and boost productivity.

**Products:** Cloud applications, federated identity management, identity management, mobile application, password management, single sign-on, software-as-a-service, web applications

**Customer Focus:** Password management, identity management, single sign-on, SaaS, cloud, web applications, mobile applications, federated identity management and password management

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓			✓	✓		✓		



Irisys is an iris security solution company. Its technology includes an iris recognition solution for smartphones, an iris recognition camera module for smartphones and a subminiature iris USB called Lockit.

**Products:** Iris recognition modules, Lockit one-time passwords, Lockit USB

**Customer Focus:** Enterprise, banks

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓				✓			



LoginRadius is a customer identity management platform offering customer registration services, profile data storage, single sign-on and more.

**Products:** Data integration, identity management, software, software as a service

**Customer Focus:** Business, information technology

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓	✓	✓				✓		✓

## Consumer Data Scorecard – All players are listed in alphabetical order.



M2SYS Technology provides enterprise solutions that enable customers and partners to utilize or integrate biometric technology. It also offers a biometric software development kit that allows developers to add biometric recognition to any software application.

**Products:** Biometric hardware, biometric technology, cloud solutions

**Customer Focus:** Banking, government, healthcare, workforce management

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓				✓	✓		



MePIN provides an authentication and transaction authorization solution designed to offer customer authentication with a single touch. Its solution implements universal two-factor authentication, strong customer authentication for payments and mobile ID services.

**Products:** Authentication, authorization

**Customer Focus:** Banks, government, telecommunications

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓			✓		✓		



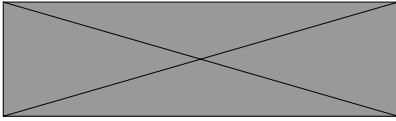
MetaStudio offers fraud defense solutions. Its products provide actionable cyber intelligence to combat fraudulent registrations, bogus leads, account hijacking and organized cyber criminals. The solutions also contribute data on known fraudsters that helps email service providers, internet service providers, lead generators and global online businesses stop criminal efforts.

**Products:** Customer authentication, email validation, instant bank verification, military lending, phone verification, ringless voicemail

**Customer Focus:** Banks, commerce, military

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓								

## Consumer Data Scorecard – All players are listed in alphabetical order.



Microsoft's Azure Active Directory is a cloud-based directory and identity management service. It enables single sign-on and grants employees access to numerous software-as-a-service programs with multifactor authentication.

**Products:** Azure Active Directory

**Customer Focus:** Communications, consumer products and services, financial services, manufacturing, media, retail

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓		✓						✓



miniOrange offers security solutions in cloud security, identity and access management, mobile, and vulnerability management.

**Products:** Cloud identity broker service, fraud prevention, network security, single sign-on, social log-in, two-factor authentication

**Customer Focus:** Education, financial services, healthcare, retail

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓		✓	✓	✓			✓	✓



MIRACL is a London-based company that applies elliptic curve cryptography to ensure trusted business transactions between people, applications and devices. Its MIRACL Trust® multifactor authentication service integrates into web and mobile applications through a cloud-based service and complies with European Union requirements for financial services companies. The company's zero-knowledge proof, M-Pin, removes the need to send or store authentication credentials, eliminating password databases.

**Products:** Multifactor authentication

**Customer Focus:** Banking, education, healthcare, government, subscription services, pharmaceuticals

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓		✓		✓		✓		✓



## Consumer Data Scorecard – All players are listed in alphabetical order.



Mitek provides mobile capture and identity verification software solutions. Mitek's identity document verification can enable enterprises to verify users' identities during mobile transactions, helping financial institutions, payments companies and other businesses operating in highly regulated markets transact business safely. Mitek also reduces the friction in mobile users' experiences with advanced data prefill.

**Products:** Deposit, mobile verify, prefill

**Customer Focus:** Enterprises, financial institutions

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓				✓			



Mobile Authentication Technologies offers mobile security and authentication solutions using smartcards and biometrics for iOS and Android devices.

**Products:** AuthentiKey, FIDO Universal Second Factor, fingerprint biometric algorithms

**Customer Focus:** Corporations, government

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓					✓		✓



MY PINPAD enables secure multifactor authentication for unsecured touchscreen devices like smartphones and tablets. It provides a modular platforms-as-a-service or customer-hosted platforms that deliver security with familiar and user-friendly authentication interfaces, like biometrics and cardholder personal identification numbers.

**Products:** Face-to-face transactions, online transaction authentication

**Customer Focus:** Banks, consumers merchants

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓			✓		✓		

## Consumer Data Scorecard – All players are listed in alphabetical order.



Neustar provides identity resolution solutions designed for a variety of industries.

**Products:** Communications, compliance risk and fraud, marketing, registry, security

**Customer Focus:** Automotive, communications, consumer packaged goods, financial services, hospitality, retail, technology, travel

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓								



Nexmo's Verify application programming interface provides authentication by phone verification. Verify detects a phone number type and selects the appropriate channel for identification – either SMS or voice.

**Products:** Verify

**Customer Focus:** Enterprises, FinTechs

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓				✓			✓	



Nok Nok Labs' ambition is to transform authentication by enabling end-to-end trust across the web using authentication methods that are natural to end-users and provide strong proof of identity. Its solutions remediate and unify authentication silos and provide organizations with greater flexibility to utilize strong authentication solutions in adaptable ways.

**Products:** S3 Authentication SDK, S3 Authentication Suite, Strong Authentication-As-A-Service

**Customer Focus:** Device manufacturers, first responders, government, identity service providers, mobile network operators, public safety, security vendors

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓				✓	✓	✓	✓

## Consumer Data Scorecard – All players are listed in alphabetical order.



NXT-ID provides products that work with the internet of things. The company also has experience with identity verification and data protection and security.

**Products:** 3D-ID, biocloud, facematch, voicematch, Wocket

**Customer Focus:** Enterprises, financial institutions, government

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓				✓	✓	✓	



NtechLab is an intelligent security solutions and software provider. The company provides facial recognition software and a security software development kit for third-party developers.

**Products:** Facial authentication

**Customer Focus:** Corporate, government, law enforcement

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓	✓			✓			



OneLogin is an identity and access management provider that offers enterprise-level single sign-on and identity-management solutions that work in the cloud. The company is based in San Francisco, California, and its products are used by more than 2,000 enterprise customers.

**Products:** Adaptive authentication, mobile identity, single sign-on, web access management

**Customer Focus:** Aeronautics, education, finance, government, healthcare, high technology, insurance, manufacturing, media, nonprofit, professional services, retail services

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓		✓	✓	✓				

## Consumer Data Scorecard – All players are listed in alphabetical order.



Okta is an independent identity solutions provider for enterprises. Its Okta Identity Cloud includes workforce and customer identity solutions and developers can use Okta's application programming interfaces to build customizable and secure user experiences.

**Products:** Adaptive multifactor authentication, application programming interface access management, life cycle management, secure server access, single sign-on, universal directory

**Customer Focus:** Financial services, technology companies

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓	✓			✓		✓		✓



OneVisage provides a disruptive digital identity platform for financial services, identity and access management providers, integrators and mobile operators.

**Products:** Premier Face SDK, Premier Secret SDK

**Customer Focus:** Access management, financial services, identity management, integrators, mobile operators

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓				✓			



Onfido's solutions are powered by machine learning, which validates identity documents by comparing them with facial biometrics. Users identities can be cross-referenced against international credit and watchlist databases.

**Products:** Document check, facial check, identity record check

**Customer Focus:** Businesses

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓	✓				✓			

## Consumer Data Scorecard – All players are listed in alphabetical order.



PalmID provides authentication and security solutions for devices with cameras. Its offerings convert a users' palm images into unique signatures.

**Products:** Biometric authentication

**Customer Focus:** Automotive, banking, enterprise security, healthcare, IoT, payments, virtual reality, wearables

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓					✓		



Paycasso's software verifies consumers' identities when they are engaging in mobile, online or in-person transactions.

**Products:** DocuSure, IdentiSure, InstaSure, VeriSure

**Customer Focus:** Financial services, healthcare, insurance, restricted goods and services, retail banking

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓				✓			



Payfone is a mobile and digital identity authentication provider. Its platform, Lotus, generates proprietary Trust Scores for mobile identities.

**Products:** Lotus

**Customer Focus:** Banks, brokerages, insurance, technology

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓								✓

## Consumer Data Scorecard – All players are listed in alphabetical order.



Ping Identity provides security for borderless enterprises, allowing employees, customers and partners access to the applications they need. The company's solutions ensure that individuals are granted secure, seamless access.

**Products:** Federated access, management capabilities

**Customer Focus:** Airlines, automobile, banking, communication, computing, education, entertainment, government, healthcare, insurance, publishing, retail

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓		✓		✓			✓	✓



PointPredictive provides fraud solutions that enable lenders and online retailers to stop fraud and reduce first payment and early payment default at low positives via analytic and big data platforms.

**Products:** Artificial intelligence solutions, risk management

**Customer Focus:** Auto finance, consumer lending, consumer rental, mortgage lending, online retail, real estate

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓								



Precise Biometrics creates fingerprint recognition solutions that can be applied to identification cards, enterprise and bank cards, as well as to systems that control access to buildings, computers and networks.

**Products:** Fingerprint technology, smart card readers

**Customer Focus:** Business, government

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓					✓		



## Consumer Data Scorecard – All players are listed in alphabetical order.



RCDevs is a security company specializing in multifactor authentication and public key infrastructure. Its OpenOTP is an enterprise-grade user authentication solution based on open standards. It supports single-factor and multifactor user access with one-time password technologies and Universal Second Factor.

**Products:** OpenOTP

**Customer Focus:** Financial, government, healthcare, information technology

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓				✓		✓		✓



Risk Ident offers anti-fraud solutions used to prevent payment fraud, account takeovers and fraud within account and loan applications.

**Products:** DEVICE IDENT, FRIDA

**Customer Focus:** eCommerce, financial, telecommunications

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓								



SailPoint helps organizations manage user access from any device. Its solutions grant users transparency, enabling them to prevent fraud and mitigate risks.

**Products:** Identity governance platform

**Customer Focus:** Enterprise software, identity management, risk management, software, software development

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓			✓				✓

## Consumer Data Scorecard – All players are listed in alphabetical order.



SecureAuth provides access control solutions, allowing organizations to determine identities. It provides authentication security, sign-in and self-service tools together in a single platform.

**Products:** Authentication security, single sign-on, user self-service

**Customer Focus:** Financial institutions, government, healthcare, retail

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓		✓		✓				✓



SecureKey is an identity and authentication provider that simplifies consumer access to online services and applications. The company's identity and authentication networks connect people to online services using digital credentials they already have and trust.

**Products:** Digital identity ecosystem, SecureKey Concierge

**Customer Focus:** Government, healthcare, online marketplaces, telecommunications

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓								



SEKUR.me reduces online payment frictions for eCommerce sites with single-click technology and multifactor authentication.

**Products:** Branded mobile payments, frictionless payments

**Customer Focus:** Mobile login and payment

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓					✓		

## Consumer Data Scorecard – All players are listed in alphabetical order.



Sensory offers fraud prevention solutions to improve consumer electronics user experiences through machine learning technologies. It enables safer experiences and specializes in deep net and learning technologies for speech recognition, machine vision and biometrics on embedded smaller footprint platforms.

**Products:** Audio technologies, hardware, software, speech technologies

**Customer Focus:** Automotive, home electronics, internet of things, mobile devices, toys, wearables

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓				✓		✓	



Shufti Pro is a digital verification software system. It seeks to create online marketplaces that do not have to worry about fraud and theft.

**Products:** Anti-money laundering, identity governance platform, identity verification, know your customer

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓				✓			



Signicat is a digital identity and signature solutions provider based in Europe.

**Products:** Advanced authentication, Digital Identity Hub, Digital Identity Service Provider, electronic signatures, Identity Assurance as a Service, identity verification, Preservation Archive

**Customer Focus:** Financial service providers, from large banks to FinTech startups

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓	✓		✓		✓		✓

## Consumer Data Scorecard – All players are listed in alphabetical order.



Socure provides digital identity verification in over 180 countries. It assists enterprises with preventing fraud and account takeovers while increasing customer acceptance rates.

**Products:** ID+

**Customer Focus:** Financial institutions, sharing economy

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓	✓	✓			✓			



Sonavation provides authentication and protection services for digital and physical environments. It offers stand-alone products as well as embedded ones.

**Products:** Biometric sensor, sensor-under-glass technology, ultrasound biometrics

**Customer Focus:** eCommerce, financial services, healthcare

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓					✓		



The Sovrin Network is a public service utility enabling online self-sovereign identities.

Sovrin is open-source and offers the tools necessary to create secure data management solutions.

**Products:** Digital identity libraries and tools

**Customer Focus:** Blockchain companies

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓		✓		✓				✓

## Consumer Data Scorecard – All players are listed in alphabetical order.



Sthaler enables consumers to pay for goods and services, gain entry to events and manage payments online with their fingerprints.

**Products:** Fingopay

**Customer Focus:** Financial services, retail

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓					✓		



Synacts offers identity protection tools for consumers. The company develops online services to give internet users full control over their data. The solution is intended for use in digital onboarding, online checkouts, eSigning, secure messaging and payment.

**Products:** Digital identification

**Customer Focus:** End users

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓				✓		✓		



Synaptics develops human interface solutions.

**Products:** Biometrics, display drivers, touch controllers, TouchPad

**Customer Focus:** Automotive, technology, wearables

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓				✓	✓		✓

## Consumer Data Scorecard – All players are listed in alphabetical order.



Tascent develops biometric identity products and solutions with a focus on iris recognition and multimodal high-throughput and mobile biometrics.

**Products:** High throughput iris recognition, mobile identity

**Customer Focus:** Borders, defense, humanitarian aid, identity, law enforcement, personal data, public safety

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓				✓	✓	✓	



TeleSign is a mobile identity solutions provider. It also offers account security and fraud prevention with two-factor authentication.

**Products:** Account registration, access and usage recovery, smart start services

**Customer Focus:** Customer relationship management software, loyalty marketing, social platforms

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓				✓				



Trulioo is a global identity verification company that provides secure access to over 200 unique and reliable data sources worldwide to instantly verify identities.

**Products:** GlobalGateway

**Customer Focus:** Banking, eCommerce, financial services, foreign exchange, online trading and lending, payments, remittance

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓		✓			✓			

## Consumer Data Scorecard – All players are listed in alphabetical order.



Trusona offers an insured digital identity authentication solution that does not require passwords. Instead, it relies on technology to analyze automated clearing house transactions to verify each digital interaction.

**Products:** Access management, consumer identity, identity proofing, multifactor authentication

**Customer Focus:** eCommerce, education, financial services, government, healthcare

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓			✓		✓		



Trustev is a fraud prevention solution powered by technology that uses information surrounding users' behaviors, devices, emails and social media accounts when attempting to determine identity.

**Products:** Digital data, identity checks

**Customer Focus:** Airlines, banking, digital goods, insurance, retail, travel

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓	✓							



UbiSecure offers a digital identity and authentication services platform. It includes customer identity and access management and identity-as-a-service solutions, enabling businesses to determine and authenticate new customers' identities.

**Products:** Identity cloud, identity platform, identity server

**Customer Focus:** Banking, eCommerce, eGovernment, insurance

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓		✓		✓				✓



## Consumer Data Scorecard – All players are listed in alphabetical order.



Veiris provides advanced computer vision technology for real-time identity verification, facial detection, facial recognition and facial analysis to address enterprises' know-your-customer needs.

**Products:** Face detection, identity verification

**Customer Focus:** eCommerce, financial institutions, FinTechs, travel

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓				✓			



Veridium offers biometric authentication technologies that increase security, reduce fraud and cut costs associated with passwords and traditional multifactor authentication solutions. VeridiumID is a software-only platform for biometric authentication that works in conjunction with a front-end mobile software development kit to embed biometrics into mobile apps.

**Products:** VeridiumID, VeridiumAD

**Customer Focus:** Enterprises, financial, government, healthcare

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓					✓		



VerifyMe offers ID services to replace passwords and PINs with multifactor authentication. The company also authenticates individuals using facial recognition, fingerprint, voice and retina scanning, swipe pattern recognition, location detection and approved IP detection.

**Products:** Anti-counterfeiting, biometrics, identity protection

**Customer Focus:** Individuals, industries, government

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓				✓	✓	✓	

## Consumer Data Scorecard – All players are listed in alphabetical order.



VisionLabs offers security and authentication products and solutions that utilize face recognition, object recognition, augmented reality and virtual reality.

**Products:** FACE.DJ, LUNA PLATFORM, LUNA SDK

**Customer Focus:** Banking, construction, retail, security, transportation

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓				✓			



VoicePIN is a voice-based biometric system for user authentication that enables users to log into a system without having to remember passwords or PIN numbers.

**Products:** Voice authentication

**Customer Focus:** Banking, eCommerce

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓						✓	



VoiceVault provides voice biometrics solutions that focus on ease of use along with convenience. Solutions are developed and delivered through partners or direct-to-client organizations, and can be deployed through a range of hosting models.

**Products:** ViGo Mobile Identity Verification, ViGo Wear For Wearables, ViM Identity And Access Management, VoiceAuth, VoiceSign

**Customer Focus:** Healthcare, financial

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓	✓						✓	

## Consumer Data Scorecard – All players are listed in alphabetical order.

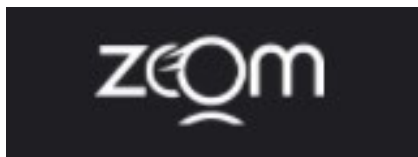


VoiceTrust offers biometric authentication experiences that are ISO 9001 and Common Criteria compliant. The products include biometric solutions consulting, solution deployments and customer support. Its voice-, face- and knowledge-based identity verification solutions are used across North America, Europe and the Middle East.

**Products:** Caller authentication, face login, password reset, proof of life, voice login

**Customer Focus:** Call centers, financial services, healthcare, helpdesk, information technology

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓		✓		✓		✓	



Zoom replaces passwords with selfie-style authentication by matching users' faces via recognition algorithms and verifying liveness with motion and three-dimensionality.

**Products:** Biometric authentication and verification  
Commercial retailers

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓			✓	✓	✓		



Applied Recognition offers face detection, recognition and authentication technology for consumers, enterprises and application developers. The company serves a range of verticals, including financial services, IoT device manufacturers and software providers.

**Products:** Signature management, enterprise content management, biometric authentication

**Customer Focus:** Financial services

IDENTITY DATA					BIOMETRICS			
Online Data	Physical	Social	Knowledge Based Questions	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓	✓	✓	✓	✓	✓	✓	✓	✓

## Device Intelligence Scorecard – All players are listed in alphabetical order.



01Systems is a software application and solution provider. Its industry products are a portfolio offering arabization, signature management, a biometric solutions integrator (finger vein, fingerprint), ECM and digital vouchers.

**Products:** Signature management, enterprise content management, biometric authentication

**Customer Focus:** Financial services

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
✓	✓	✓	✓	✓	✓	✓	✓	✓



BeyondTrust is a global cybersecurity company that prevents data breaches by exercising control over internal and external risks.

**Products:** AD auditing, AD bridge, assessment, data security solutions, information security management systems, least privilege, Linux privilege management, privileged access management, privileged account management, privileged password management, secure shell key management, session monitoring, Sudo, threat analytics, Unix privilege management, vulnerability management, Windows privilege management

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
✓				✓				✓



BioCatch provides behavioral biometric, authentication and malware detection solutions for mobile and web applications. It collects and analyzes cognitive parameters to generate user profiles.

**Products:** Behavioral authentication, fraud prevention, remote access tool detection

**Customer Focus:** Banking, eCommerce, enterprise

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
✓	✓							

## Device Intelligence Scorecard – All players are listed in alphabetical order.



CA Technologies' CA Advanced Authentication provides real-time protection for online and mobile applications. The solution can authenticate an employee, a partner or a contractor while providing a seamless login experience. It includes features multifactor authentication and risk-based methods such as device identification, geolocation and user activity.

**Products:** Advanced authentication, API security, identity management, payment security

**Customer Focus:** Enterprise, financial institutions

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
✓	✓			✓				✓



Callsign offers Intelligence Driven Authentication, a software designed to enable informed and adaptive access control decisions via location and behavior analytics, biometrics and machine learning.

**Products:** Intelligence Driven Authentication

**Customer Focus:** Enterprises, customer-facing digital services, financial institutions

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
	✓			✓	✓	✓	✓	✓



CardinalCommerce provides authenticated payments, secure transactions and alternative payments for both eCommerce and mobile commerce.

**Products:** Alternative payments, big data, consumer authentication, mobile, solution design

**Customer Focus:** Banks, merchants

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
✓	✓							✓

## Device Intelligence Scorecard – All players are listed in alphabetical order.



Centrify's identity-as-a-service (IDaaS) solutions can be used to verify users, validate devices and put limits on access and privilege. It utilizes machine learning to discover risky user behavior and apply conditional access, and all without impacting user experience.

**Products:** Single sign-on, adaptive multifactor authentication, privileged access management, risk analytics

**Customer Focus:** Automotive, banking, defense and government, education, internet, manufacturing, retail, pharma, telco

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
✓				✓				✓



CounterTack provides predictive enterprise protection platforms to mitigate risk.

**Products:** Cloud security, cybersecurity, network security, security

**Customer Focus:** Enterprise customers

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
✓	✓			✓				✓



Duo Security aims to protect organizations against data breaches by ensuring that only legitimate users and appropriate devices have access to sensitive data and applications.

**Products:** Verify user identity, devices

**Customer Focus:** Education, financial, healthcare, legal, retail, technology

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
✓	✓			✓				✓

## Device Intelligence Scorecard – All players are listed in alphabetical order.



Easy Solutions is focused on the detection and prevention of electronic fraud across devices, channels and clouds.

**Products:** Fraud intelligence, fraudulent transaction and activity detection, mobile anti-fraud protection suite, mobile authentication, safe browsing, strong authentication

**Customer Focus:** Airlines, enterprises, financial services, infrastructure, retail, security

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
✓		✓						✓



Encap Security offers strong authentication and eSignature solutions for the financial services industry. Its smarter authentication platform is integrated into individual customer infrastructures and delivers security and user experience across all applications, channels and devices. The platform supports Apple Touch ID and Samsung fiFingerprint.

**Products:** Smarter authentication platform

**Customer Focus:** Banking, enterprise, healthcare, identity providers

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
✓						✓		✓



Entersekt offers push-based authentication and app security with products that comply with most regulatory guidelines.

**Products:** Card-not-present authentication, mobile app, mobile banking, online banking

**Customer Focus:** Banking, healthcare, insurance, mobile

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
✓				✓				



## Device Intelligence Scorecard – All players are listed in alphabetical order.



Entrust Datacard, formerly known as Datacard Group, offers digital identity solutions to FIs, governments and corporate enterprises that conduct highly secure transactions. Some of its solutions include central card issuance systems, passport and ID cards and offering security certificates and communication channels.

**Products:** Authentication, identity credential management, SSL certificates, employee ID, mobile authentication, border control

**Customer Focus:** Financial, government, corporate, education, healthcare, retail, transit

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
✓	✓			✓	✓	✓		✓



Evernym provides data security solutions. It works with other organizations to create and deploy private-by-design solutions offering control and ownership of personal data.

**Products:** Claims exchange, claims issuing, decentralized application stack, identity owner tools, trust anchor services, verification tools

**Customer Focus:** Commerce, education, finance, healthcare, travel

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
	✓	✓						✓



EZMCOM is a security access software developer. The company's biometric authentication solutions can be deployed to protect users, data and applications from credential theft, account takeover and breaches.

**Products:** 3D Secure, behavioral authentication, document authentication, fusion biometrics, hardware, mobile public key infrastructure tokens, multifactor authentication, risk-based authentication

**Customer Focus:** Banking, eCommerce, enterprises, government, law

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
✓				✓	✓	✓	✓	✓

## Device Intelligence Scorecard – All players are listed in alphabetical order.



**Products:** Authentication, digital mobile wallet, issuance, platform, registration

**Customer Focus:** Banking, central government, education, local government, membership, organizations, legal applications, accounting

Folio harnesses advanced biometrics, artificial intelligence and smartphone technology to analyze and verify users' identities through documents, photo identification and physical attributes. Encrypted credentials can be certified and issued directly via the Folio app and they are accessible only to registered, biometrically paired users. Folio gives users complete control over their data.

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
					✓	✓		✓



**Products:** Access management, user managed access, identity management, identity gateway, directory service

**Customer Focus:** Digital health, financial services, omnichannel retail, communication and media, government

ForgeRock, an identity relationship management vendor, works to help companies and governments to build secure, customer-facing relationships across apps and devices. Its access management solution provides authentication possibilities with several out-of-the-box authentication modules to fit the needs of business, including device fingerprinting, one-time passwords and adaptive risk authentication.

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
✓				✓				✓



**Products:** QuickID, QuickID Smart, QuickSafe, two-factor authentication

**Customer Focus:** Enterprises, first responders, healthcare, mobile field service

FusionPipe offers secure software authentication solutions to improve productivity and enhance data and network security. Its QuikSafe Authentication platform leverages personal devices to provide secure, convenient multifactor authentication without the need for smart cards, readers or hardware-based solutions.

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
✓				✓		✓		

## Device Intelligence Scorecard – All players are listed in alphabetical order.



IDology, Inc. provides real-time technology solutions that aim to verify the identities and ages of consumers who are not present.

**Products:** Financial services, tax, distance learning, health care, insurance, retail, gaming, telecommunications, eCommerce

**Customer Focus:** N/A

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
✓				✓				



InAuth is a digital device intelligence company. The InAuth Security Platform delivers advanced device identification, analysis and risk assessment to help organizations reduce fraud.

**Products:** Analysis, device identification, integrity screening, risk assessment

**Customer Focus:** Banking, eCommerce, enterprise, healthcare, payments

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
	✓	✓	✓	✓	✓		✓	



Iovation exposes online fraudsters in real time and provides multifactor authentication services. Its software-as-a-service solution examines the devices' reputations to provide security.

**Products:** ClearKey, fraud prevention, LaunchKey, multifactor authentication, SureScore

**Customer Focus:** Financial services, retail

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
✓	✓		✓	✓		✓		

## Device Intelligence Scorecard – All players are listed in alphabetical order.



Kount helps online businesses increase sales by reducing fraud and allowing them to accept more orders. For each transaction, Kount's decisioning engine analyzes hundreds of relevant variables and activity from across the globe in real time.

**Products:** Access, fraud prevention platform

**Customer Focus:** Healthcare, insurance, payment processors, retail, telecommunications

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
✓	✓							



LiveEnsure is an interactive authentication company with solutions that authenticate users, mobile devices, sessions, locations and behavior contexts with app-to-app rollover or touch-to-tap engagement. LiveEnsure offers mobile security solutions for cloud, web and apps on iOS, Android and Windows.

**Products:** Four factors of authentication

**Customer Focus:** eCommerce, financial services, telecommunications, web developers

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
✓	✓							



MaxMind's GeoIP data is used to locate internet visitors and show them relevant content and ads, prevent fraudulent online transactions and reduce manual review.

**Products:** GeoIP2, minFraud

**Customer Focus:** eCommerce

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
✓	✓							

## Device Intelligence Scorecard – All players are listed in alphabetical order.



**Products:** Customer authentication, Instant bank verification, Military lending act, Phone verification, Ringless voicemail, Email validation

**Customer Focus:** Bank, Military, Commerce

MetaStudio offers fraud defense solutions. Its products are designed to provide actionable cyber intelligence to combat fraudulent registrations, bogus leads, account hijacking and organized cyber criminals. The solutions also work to contribute data on known fraudsters that helps email service providers, internet service providers (ISP), lead generators and global online businesses stop fraudsters efforts.

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
✓	✓							



**Products:** Cloud identity broker service, 2FA, single sign-on, fraud prevention, network security, social login

**Customer Focus:** Financial services, retail, healthcare, education

miniOrange offers security solutions in the areas of cloud security, identity and access management, mobile Security, and vulnerability management. Its products include miniOrange Strong Authentication, miniOrange Single Sign-on solution and the miniOrange Fraud Prevention solution.

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
✓	✓			✓			✓	✓



**Products:** 3DS Merchant With Data Gateway, EMV 3DS Compliancy Platform, USDK And SDK Manager

**Customer Focus:** Banking, eCommerce, gaming, healthcare, payments

mSIGNIA offers mobile authentication and device recognition solutions. The company's software helps businesses limit risk, reduce fraud and enhance customer experiences within fast-growing digital channels. mSignia uses authentication, intelligent behavior data analytics and biometric authentication.

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
✓	✓	✓	✓	✓		✓		

## Device Intelligence Scorecard – All players are listed in alphabetical order.



Neustar provides identity resolution solutions designed for industries including marketing, security and communications, among others.

**Products:** Marketing, Compliance Risk and Fraud, Security, Registry, Communications

**Customer Focus:** Retail & Consumer Packaged Goods, Financial Services, Automotive, Travel & Hospitality, Communications & Technology.

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
	✓							



NoPassword, powered by WiActs, offers identity management and password-free single sign-on solutions. Its products are designed around biometrics and feature multifactor authentication.

**Products:** Hidden multifactor authentication, human multifactor authentication, NoPassword Authentication

**Customer Focus:** Financial, government, healthcare, insurance, retail, technology, travel

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
✓	✓		✓		✓	✓	✓	



Okta's Identity Cloud solution is designed to securely connect enterprises to their partners, suppliers and customers. It uses deep integrations to secure access from any device.

**Products:** Single Sign-On, Multi-Factor Authentication, Lifecycle Management, Universal Directory, API Access Management

**Customer Focus:** Cloud, Consumer, Education, Finance, Government, Healthcare, Manufacturing, Media, Non-Profit, Retail, Services, Technology, Transportation

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
✓		✓		✓		✓	✓	✓

## Device Intelligence Scorecard – All players are listed in alphabetical order.



OneLogin is a cloud-based identity and access management provider that offers enterprise-level single sign-on and identity-management solutions. The company's solution is used by more than 2,000 enterprise customers for securing and managing identities in cloud, legacy and hybrid environments.

**Products:** Adaptive authentication, mobile identity, single sign-on, web access management

**Customer Focus:** Education, finance, government healthcare, high-tech, insurance, manufacturing, media, nonprofit, professional services and retail services

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
✓	✓			✓				



OneSpan's security and eSignature solutions protect people, devices and transactions from fraud, providing rock-solid security and a frictionless customer experience. This enables even the most regulated companies to drive bold digital transformations and deliver powerful digital interactions with their customers.

**Products:** Cybersecurity, information technology, security

**Customer Focus:** Banks, businesses

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
✓				✓	✓	✓	✓	✓



PrivacKey offers multifactor authentication without requiring passwords, password managers, SMS messages, out-of-band codes or other protocols. It allows users to use personal devices like phones, tablets or computers with a PIN or biometrics as the unstored second factor. This protects against phishing, keylogging, device cloning, account takeover and other common attacks.

**Products:** Two-factor authentication

**Customer Focus:** Financial services

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
✓				✓		✓		



## Device Intelligence Scorecard – All players are listed in alphabetical order.



**Products:** OpenOTP™ server (multi-factor with OTP and FIDO-U2F)

**Customer Focus:** SMEs, IT, financial, healthcare and government sectors

RCDevs is a security company specializing in multifactor authentication and PKI. RCDevs provides solutions to customers ranging from SMEs to large corporations in the IT, financial, healthcare and government sectors. Its OpenOTP is an enterprise-grade user authentication solution based on open standards. It supports the combinations of single-factor and multifactor user access with one-time password technologies (OTP) and universal second factor (FIDO-U2F).

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
	✓			✓		✓		✓



**Products:** FRIDA fraud manager, DEVICE IDENT device fingerprinting, EVE evaluation engine

**Customer Focus:** eCommerce, telecommunication, financial sector

Risk Ident is a software provider that offers anti-fraud solutions to companies within the eCommerce, telecommunication and financial sectors. Risk Ident's key products are FRIDA Fraud Manager, DEVICE IDENT Device Fingerprinting and EVE Evaluation Engine, designed for use in payment fraud, account takeovers, and fraud within account and loan applications.

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
	✓		✓					



**Products:** Access management, authentication, credential management, credit/debit card information protection, consumer identity protection, data protection, identity administration, mobile workforce security, password management, portal and partner integration, regulatory compliance

RSA provides business-driven solutions for advanced threat detection, cyber incident response, identity and access management and governance, risk management and compliance.

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
✓	✓	✓		✓	✓	✓		✓

## Device Intelligence Scorecard – All players are listed in alphabetical order.



SecureAuth provides access control solutions, allowing organizations to determine identities. SecureAuth™ IdP provides authentication security, sign-in and self-service tools together in a single platform.

**Products:** Authentication security, single sign-in and user self-service

**Customer Focus:** Financial institutions, healthcare, retail, government and other industries

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
✓	✓			✓				✓



Sift offers fraud detection systems, using large-scale machine learning technology to predict fraudulent behavior. The solution catches fraud that is unique to different businesses and stops fraudsters in real time.

**Products:** Device fingerprinting, machine learning

**Customer Focus:** Digital cash, eCommerce, on-demand services, online marketplaces, payment gateways, travel

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
✓	✓		✓					



Socure provides digital identity verification. The company's technology applies machine-learning techniques with trusted online/offline data intelligence from email, phone, address, IP, social media and the broader internet to authenticate identities in real time. The company has established global channel partnerships with credit bureaus, identity verification vendors and other solution providers. The company powers financial inclusion verifying identities in over 180 countries, helping enterprises combat identity fraud, prevent account takeover and increase customer acceptance.

**Products:** ID+ (digital identity verification), perceive (remote facial biometrics), business verification

**Customer Focus:** Financial institutions, sharing economy

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
✓	✓				✓			

## Device Intelligence Scorecard – All players are listed in alphabetical order.



ThreatMetrix offers advanced fraud prevention and context-based security solutions that authenticate consumer and workforce access to mission critical applications using real-time identities and analytics.

**Products:** Advanced fraud protection, content-based authentication

**Customer Focus:** eCommerce, Federal Financial Institutions Examination Council, financial institutions, government, healthcare, insurance, social networks

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
✓	✓	✓	✓	✓	✓			



Trustev, owned by Transunion, is a fraud prevention solution powered by technology that uses information surrounding a user's behavior, device, email and social media when attempting to determine identity. Trustev provides services to retail, banking, digital goods, insurance, airlines and other travel-related companies.

**Products:** ID checks, digital data

**Customer Focus:** Retail, banking, digital goods, airlines & travel, insurance

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
✓	✓							



Vantage Point stops friendly fraud by creating digital video recordings of customers placing orders online. The recordings contain the device and environment fingerprint – combined with customer interactions as they navigate websites – adding an extra layer of security.

**Products:** Devices fingerprinting

**Customer Focus:** eCommerce

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
	✓		✓					

## Device Intelligence Scorecard – All players are listed in alphabetical order.



VASCO provides two-factor authentication and electronic signature solutions to financial institutions. The company also offers access to data and applications in the cloud and provides tools for application developers to integrate security functions into their web-based and mobile applications.

**Products:** Compliance, documents, eSignature, fraud prevention, identity and access, mobile app security, transaction signing

**Customer Focus:** eCommerce, enterprise, financial, government, healthcare

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
✓	✓		✓	✓		✓		✓



Veridium offers biometric authentication technology. The company's solutions help organizations increase security, reduce fraud and cut costs associated with passwords and traditional multifactor authentication solutions. VeridiumID is a software-only platform for biometric authentication which works in conjunction with a front-end mobile SDK to embed biometrics into a company's mobile app.

**Products:** VeridiumID, VeridiumAD

**Customer Focus:** Financial, healthcare, enterprise, government

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
✓						✓		



VerifyMe offers ID services to replace passwords and PINs with multi-factor authentication. The company also provides the ability to authenticate individuals using facial recognition, fingerprint, voice and retina scanning, swipe pattern recognition, location detection and approved IP detection.

**Products:** Biometrics, identity protection, anti-counterfeiting

**Customer Focus:** Industries, governments, and individual

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
	✓				✓	✓	✓	

## Device Intelligence Scorecard – All players are listed in alphabetical order.



Yoti provides security software solutions. Its offerings include a digital identity platform to improve online and in-person security by verifying and authenticating the user.

**Products:** Age checks, biometric log-in, building access, customer authentication, digital identity, identity verification

**Customer Focus:** eCommerce, financial services, healthcare, venues

Device Fingerprinting	IP Geolocation	True Application	Device Emulator / With Malware	PIN	BIOMETRICS			
					Camera	Fingerprint	Microphone	Security Tokens
✓	✓	✓		✓	✓	✓		✓

## Transaction Behavior Scorecard – All players are listed in alphabetical order.



AimBrain is a mobile biometric authentication platform. It uses behavioral, facial and voice recognition as well as patent-pending technology to authenticate the user.

**Products:** Biometric authentication

**Customer Focus:** Financial

PAYMENTS				BIOMETRICS			
Click Flow	History	Transaction	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓					✓	✓	



AuthenWare is a cybersecurity software firm providing businesses with solutions to fight identity theft. Its AuthenWare Technology enables customers to deliver enterprise application, website and transaction security, as well as installation, configuration, identification, testing, instructor-led product training and production deployment services.

**Products:** Online authentication

**Customer Focus:** Consumers, cybersecurity, government, security, small and medium-sized businesses, software

PAYMENTS				BIOMETRICS			
Click Flow	History	Transaction	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓	✓						



Balabit is a contextual security technologies provider that prevents data breaches without constraining business. Balabit operates globally with offices across the United States and Europe. The company's platform offers real-time protection from threats posed by the misuse of high-risk and privileged accounts.

**Products:** Application log management, behavioral analytics, privileged user monitoring, user behavior analytics

**Customer Focus:** Cloud and managed service providers, finance, government, healthcare, higher education, telecommunications

PAYMENTS				BIOMETRICS			
Click Flow	History	Transaction	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓	✓						✓

## Transaction Behavior Scorecard – All players are listed in alphabetical order.



BehavioSec offers Behaviometric solutions for risk-based authentication of end users. Behaviometrics identifies unauthorized users by detecting anomalies in keyboard/mouse or environment behavior and creates digital fingerprints from user behaviors.

**Products:** Authentication, behavioral biometrics, fraud detection, information technology security, information theft

**Customer Focus:** Financial, information technology, online services

PAYMENTS				BIOMETRICS			
Click Flow	History	Transaction	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓							



BioCatch provides behavioral biometric, authentication and malware detection solutions for mobile and web applications. Available as a cloud-based solution, BioCatch collects and analyzes cognitive parameters to generate a user profile.

**Products:** Behavioral authentication, RAT detection, fraudulent activity

**Customer Focus:** Banking, eCommerce, enterprise

PAYMENTS				BIOMETRICS			
Click Flow	History	Transaction	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓							



Biometric Signature ID develops biometric ID verification software solutions that use multifactor authentication. The company helps organizations control risk, reduce fraud, manage security and maintain compliance.

**Products:** BioName-ID, BioProof-ID, BioSafe-ID, BioSig-ID, BioTect-ID, reporting and forensics

**Customer Focus:** eCommerce, education, enterprise, financial, healthcare

PAYMENTS				BIOMETRICS			
Click Flow	History	Transaction	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓							



## Transaction Behavior Scorecard – All players are listed in alphabetical order.



CA Technologies' CA Advanced Authentication provides real-time protection for online and mobile applications. The solution can authenticate an employee, a partner or a contractor while providing a seamless login experience. It includes features multifactor authentication and risk-based methods such as device identification, geolocation and user activity.

**Products:** Advanced authentication, API security, identity management, payment security

**Customer Focus:** Enterprise, financial institutions

PAYMENTS				BIOMETRICS			
Click Flow	History	Transaction	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓	✓						



Credence ID offers biometric authentication tools, including mobile fingerprint, iris and facial recognition technologies.

**Products:** Mobile biometric hardware and software

**Customer Focus:** Biometrics, enterprise, ePayments, government, identity

PAYMENTS				BIOMETRICS			
Click Flow	History	Transaction	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓							



Crossmatch aims to help organizations solve their identity management challenges. Its enrollment and authentication solutions are used to create, validate and manage identities for a range of government, law enforcement, financial institution, retail and commercial applications. Crossmatch's solutions are designed using biometric technologies and multifactor authentication software.

**Products:** Authentication, enrollment, mobile, SDKs

**Customer Focus:** Defense, finance, government, law enforcement, hospitality and retail, enterprise

PAYMENTS				BIOMETRICS			
Click Flow	History	Transaction	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓			✓		✓		

## Transaction Behavior Scorecard – All players are listed in alphabetical order.



Early Warning provides payment and risk solutions to financial institutions, government entities and payment companies. Its identity and authentication offerings are intended to improve account opening, simplify and unify authentication through a single API, and fight fraud with behavioral biometrics.

**Products:** Authentication, payment, regulatory solutions

**Customer Focus:** Financial institutions, government entities, payment companies

PAYMENTS				BIOMETRICS			
Click Flow	History	Transaction	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓		✓				



Easy Solutions is focused on the detection and prevention of electronic fraud across devices, channels and clouds. Easy Solutions products range from fraud intelligence and secure browsing to multifactor authentication and transaction anomaly detection.

**Products:** Mobile anti-fraud protection suite, fraudulent transaction and activity detection, fraud intelligence, strong authentication, save browsing for any environment, mobile authentication

**Customer Focus:** Financial services, security firms, retailers, airlines

PAYMENTS				BIOMETRICS			
Click Flow	History	Transaction	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓		✓				



FICO is an analytics software company, with solutions designed to help businesses make better decisions through Big Data and mathematical algorithms to predict consumer behavior. FICO provides analytics software and tools used across multiple industries to manage risk, fight fraud, build more profitable customer relationships, optimize operations and meet strict government regulations.

**Products:** Analytics, fraud and security, scores, communications

**Customer Focus:** Transportation and travel

PAYMENTS				BIOMETRICS			
Click Flow	History	Transaction	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓	✓	✓					

## Transaction Behavior Scorecard – All players are listed in alphabetical order.



Forter's decision-as-a-service system eliminates fraud prevention frictions, such as the need for rules, scores or manual reviews. The company's machine learning technology combines cyber intelligence with behavioral and identity analysis to create a multilayered fraud detection mechanism.

**Products:** Behavioral analysis, cyber intelligence, elastic identity

**Customer Focus:** Online merchants

PAYMENTS				BIOMETRICS			
Click Flow	History	Transaction	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓	✓					



FST Biometrics offers solutions that utilize biometric identification technology to provide secure access. The company's motion identification system combines facial recognition, behavioral analytics and voice analytics to identify authorized individuals from a distance and in motion.

**Products:** Digital doorman, in-motion identification, mobile

**Customer Focus:** Airports, corporates, education, entertainment, financial, healthcare, residential, retail, pharmaceuticals

PAYMENTS				BIOMETRICS			
Click Flow	History	Transaction	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓				✓		✓	



ID Analytics' solution provides actionable insights into enterprises' credit and identity risk. It does this through a combination of proprietary data, patented analytics and up-to-the-minute consumer behavior insights from the ID Network, one of the nation's largest networks of such cross-industry data.

**Products:** Authentication and Verification, Credit Risk, Fraud Risk Management

**Customer Focus:** Automotive lending, communications, credit card, government, online lending, retail banking

PAYMENTS				BIOMETRICS			
Click Flow	History	Transaction	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓						

## Transaction Behavior Scorecard – All players are listed in alphabetical order.



IdentityMind Global platform provides identity-based risk management, fraud prevention, and anti-money laundering services for online lenders, acquiring banks, payment processors, gateways, payment service providers, digital currency exchanges, financial institutions, and eCommerce merchants.

**Products:** Online fraud prevention, anti-money laundering, merchant risk

**Customer Focus:** Online merchants, acquiring banks, payment processors and gateways, payments services providers, digital currency exchanges, and financial institutions

PAYMENTS				BIOMETRICS			
Click Flow	History	Transaction	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓						



ID R&D is a biometric solution provider focusing on the development of new biometric solutions to increase security and enhance user experience. The company has developed a suite of core biometric technologies for mobile login, chatbots and virtual assistants, and its solutions utilize various data points and biometric modalities (including behavioral, voice and facial recognition) to create frictionless biometric authentication in emerging communication channels.

**Products:** IDSquared, SafeChat, IDVoice, Voice Anti-spoof, IDBahave

**Customer Focus:** N/A

PAYMENTS				BIOMETRICS			
Click Flow	History	Transaction	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓				✓		✓	



KeyTrac provides companies with biometric solutions to identify users. Its offerings can be accessed using a common and commercially available computer keyboard.

**Products:** Keystroke biometrics

**Customer Focus:** eLearning, financial, legal, online services, startups, universities

PAYMENTS				BIOMETRICS			
Click Flow	History	Transaction	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓							

## Transaction Behavior Scorecard – All players are listed in alphabetical order.



miniOrange offers security solutions in the areas of cloud security, identity and access management, mobile security and vulnerability management. Its products include miniOrange Strong Authentication, miniOrange Single Sign-On solution and the miniOrange Fraud Prevention solution.

**Products:** Cloud identity broker service, 2FA, single sign-on, fraud prevention, network security, social login

**Customer Focus:** Financial services, retail, healthcare, education

PAYMENTS				BIOMETRICS			
Click Flow	History	Transaction	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓			✓				✓



NetGuardians provides software that uses data to correlate and analyze behaviors across an entire bank system. The solution allows banks to target specific anti-fraud or regulatory requirements.

**Products:** Fraud protection

**Customer Focus:** Financial

PAYMENTS				BIOMETRICS			
Click Flow	History	Transaction	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓						



NoPassword, powered by WiActs, offers identity management and password-free single sign-on solutions. Its products are designed around biometrics and feature multifactor authentication.

**Products:** NoPassword Authentication, Human and hidden multifactor authentication

**Customer Focus:** Financial, Insurance, Healthcare, Technology, Government, Manufacturing, Retail, Travel

PAYMENTS				BIOMETRICS			
Click Flow	History	Transaction	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓				✓	✓	✓	

## Transaction Behavior Scorecard – All players are listed in alphabetical order.



NuData Security positively verifies users online with real-time passive biometrics and behavioral analytics.

**Products:** Cybersecurity, enterprise software, fraud detection, internet

**Customer Focus:** Financial

PAYMENTS				BIOMETRICS			
Click Flow	History	Transaction	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓	✓	✓					



Plurilock's solutions use artificial intelligence to identify, prevent and eliminate insider threats.

**Products:** Plurilock Adapt, Plurilock Aware, Plurilock Defend

**Customer Focus:** Banks, critical infrastructure, financial, government, healthcare, military

PAYMENTS				BIOMETRICS			
Click Flow	History	Transaction	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓							



SecureAuth provides access control solutions, allowing organizations to determine identities. SecureAuth™ IdP provides authentication security, sign-in and self-service tools together in a single platform.

**Products:** Authentication security, single sign-in and user self-service

**Customer Focus:** Financial institutions, healthcare, retail, government and other industries

PAYMENTS				BIOMETRICS			
Click Flow	History	Transaction	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓			✓				✓

## Transaction Behavior Scorecard – All players are listed in alphabetical order.



### SECUREDTOUCH

SecuredTouch offers behavioral biometrics for mobile devices. The company collects and analyzes different behavioral parameters to create a unique user behavioral profile to authenticate transactions. The company offers both application- and device-based solutions.

**Products:** Behavioral biometrics

**Customer Focus:** Financial

PAYMENTS				BIOMETRICS			
Click Flow	History	Transaction	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓	✓						



Sift Science offers fraud detection systems, using large-scale machine learning technology to predict fraudulent behavior, leveraging a global network of fraud data. The solution is intended to catch fraud that is unique to different businesses and to train specific customer customized models to stop fraudsters in real time.

**Products:** Machine learning, device fingerprinting

**Customer Focus:** Travel, digital cash, on-demand, online marketplace, eCommerce, payment gateway

PAYMENTS				BIOMETRICS			
Click Flow	History	Transaction	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓	✓					



Solus Connect's platform uses multifactor authentication and biometrics to verify users with no hardware necessary

**Products:** Behavioral authentication, eyeprint, multifactor authentication

**Customer Focus:** Banks, enterprises, finance, government, healthcare

PAYMENTS				BIOMETRICS			
Click Flow	History	Transaction	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓			✓	✓			

## Transaction Behavior Scorecard – All players are listed in alphabetical order.



TeleSign is a provider of mobile identity solutions and offers account security and fraud prevention with two-factor authentication, based on each user's mobile identity (phone number, device and behavior), which is driven by real-time global intelligence, including reputation scoring and device data.

**Products:** Account registration, access and usage recovery, smart start services

**Customer Focus:** Software CRM, loyalty marketing, social platforms

PAYMENTS				BIOMETRICS			
Click Flow	History	Transaction	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓			✓	✓	✓		✓



ThisData offers an advanced data security application to protect client information through cloud-based storage. It leverages behavioral biometrics and advanced machine intelligence to create user profiles based on user activity. The profile will automatically detect unusual behaviors, such as accessing an application from an unrecognized device or a new location.

**Products:** Account takeover, adaptive authentication, continuous authentication, fraud detection, intelligence community, risk scoring, threat intelligence, two-factor authentication

**Customer Focus:** Commerce, education, finance, healthcare, travel

PAYMENTS				BIOMETRICS			
Click Flow	History	Transaction	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓	✓	✓					



ThreatMetrix offers advanced fraud prevention and context-based security solutions. These solutions authenticate consumer and workforce access to mission critical applications using real-time identity and analytics.

**Products:** Advanced fraud protection, content-based authentication

**Customer Focus:** eCommerce, financial institutions and FFIEC, enterprise, insurance, social networks, government, healthcare

PAYMENTS				BIOMETRICS			
Click Flow	History	Transaction	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓	✓		✓	✓			



## Transaction Behavior Scorecard – All players are listed in alphabetical order.



Trusteer provides endpoint cybercrime prevention solutions and clientless fraud prevention products. Its offerings protect against financial fraud and data breaches.

**Products:** Banking, fraud detection, network security

**Customer Focus:** Brokerages, online banks, retailers

PAYMENTS				BIOMETRICS			
Click Flow	History	Transaction	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓	✓						



Trustev, owned by Transunion, is a fraud prevention solution powered by technology that uses information surrounding a user's behavior, device, email and social media when attempting to determine identity. Trustev provides services to retail, banking, digital goods, insurance, airlines and other travel-related companies.

**Products:** ID checks, digital data

**Customer Focus:** Retail, banking, digital goods, airlines & travel, insurance

PAYMENTS				BIOMETRICS			
Click Flow	History	Transaction	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓							



Twosense provides a mobile software development kit that offers continuous, invisible user authentication practices through behavioral biometrics. It can be integrated with a few lines of code, and observes and models authorized users' behavioral fingerprints to deny entry to attackers. The solution also applies deep learning tools to reduce fraud and improve user experiences.

**Products:** Behavioral biometrics, fraud protection

**Customer Focus:** Call centers, mobile banking, mobile payments

PAYMENTS				BIOMETRICS			
Click Flow	History	Transaction	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓					✓		

## Transaction Behavior Scorecard – All players are listed in alphabetical order.

# typingdna

TypingDNA provides biometric technology. It offers proprietary artificial intelligence software to identify users by the way they type on their keyboards. The solution also provides quick integration via application program interfaces.

**Products:** Authentication solutions

**Customer Focus:** Financial

PAYMENTS				BIOMETRICS			
Click Flow	History	Transaction	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓							

# unbotify

Unbotify's security solution leverages behavioral biometrics data and machine learning models to offer bot detection. It analyzes hundreds of features extracted from mouse movement data, keystroke dynamics, touch events and mobile device orientation sensors, and isolates bots that carry out malicious activities.

**Products:** Attribution, analytics, audience builder, fraud prevention, Unbotify

**Customer Focus:** Agencies, eCommerce, finance, gaming, subscription, travel

PAYMENTS				BIOMETRICS			
Click Flow	History	Transaction	PIN	Camera	Fingerprint	Microphone	Security Tokens
	✓	✓				✓	

# UNIFYID

UnifyID offers authentication services with solutions that rely on implicit authentication and are based on location, technology usage habits and sensor technology. The company also offers machine learning software.

**Products:** Implicit authentication

**Customer Focus:** All industries

PAYMENTS				BIOMETRICS			
Click Flow	History	Transaction	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓							

## Transaction Behavior Scorecard – All players are listed in alphabetical order.



VASCO is a provider of two-factor authentication and electronic signature solutions to financial institutions. The company also offers access to data and applications in the cloud, and provides tools for application developers to integrate security functions into their web-based and mobile applications. The company primarily serves clients in the financial, enterprise, eCommerce, government and healthcare markets.

**Products:** Mobile app security, compliance, fraud prevention, transaction signing, identity and access, documents eSignature

**Customer Focus:** Financial, enterprise, eCommerce, government, healthcare

PAYMENTS				BIOMETRICS			
Click Flow	History	Transaction	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓			✓			✓	✓



Zighra's provides user recognition by adding an invisible biometric layer to mobile and internet of things authentication. Zighra applies the intelligence of biological systems to security to deliver continuous authentication to mobile transactions.

**Products:** SensifyID

**Customer Focus:** Mobile financial services, retail

PAYMENTS				BIOMETRICS			
Click Flow	History	Transaction	PIN	Camera	Fingerprint	Microphone	Security Tokens
✓							

# ABOUT

## Feedback

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Leveraging advanced technology including informed AI, biometrics, machine learning, certified 3D liveness detection and human review, Jumio helps organizations meet regulatory compliance including KYC, AML and GDPR and definitively establish the digital identity of their customers. Jumio has verified more than 225 million identities issued by over 200 countries and territories from real-time web and mobile transactions. Jumio’s solutions are used by leading companies in the financial services, sharing economy, digital currency, retail, travel and online gaming sectors. Based in Palo Alto, California, Jumio operates globally with offices in North America, Latin America, Europe and the Asia-Pacific and has been the recipient of numerous awards for innovation. For more information, please visit [www.jumio.com](http://www.jumio.com).

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