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# DIGITAL IDENTITY TRACKER<sup>®</sup>

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# DIGITAL IDENTITY TRACKER®

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## ACKNOWLEDGMENT

The Digital Identity Tracker® is done in collaboration with Jumio, and PYMNTS is grateful for the company's support and insight. PYMNTS.com retains full editorial control over the following findings, methodology and data analysis.

# WHAT'S INSIDE

Digital banking has been a boon to consumers who are avoiding brick-and-mortar branch visits during the pandemic, but financial institutions (FIs) are still facing several challenges as more customers take their financial habits online. One significant friction plaguing many banks is their lack of digital verification solutions — especially when it comes to account setup. A recent [FICO report](#) revealed that 51 percent of FIs in the United States and Canada still require customers to prove their identities by visiting bank branches or providing physical documents to open accounts online, for example.

There are several innovative solutions that can help banks change course on their digital ID strategies, however. The same shift that is prompting many consumers to seek cutting-edge digital and mobile banking experiences is also making them more comfortable with new technologies like biometrics. Seventy-one percent of consumers in a recent [survey](#) said they would be comfortable uploading selfies, scanning their fingerprints or providing voice-based biometrics to their banks, for example, and just 13 percent felt FIs should not be able to access their biometrics.

This is not to say that adopting digital verification solutions will be a light lift for banks. Know your customer (KYC), anti-money laundering (AML) and nation-specific data privacy rules can make it challenging for FIs to determine which measures will work best for their organizations, but investing in robust digital ID solutions is likely to be well worth it in the long run.

## **Around the digital ID space**

Digital ID and biometric technologies hold great promise for banks looking to streamline their digital verification measures, but a recent [survey](#) revealed just how important it is for FIs to ensure that they are getting the most out of these tools. It found that 30 percent of FIs, even those that are using digital ID solutions, are still requiring customers opening additional accounts to complete applications wholesale rather than relying on streamlined authentication measures to simplify the process. This illustrates that many banks can still do more to ease account opening for their customers.

Some banks are turning to partnerships as they work to upgrade their digital banking experiences.

# EXECUTIVE INSIGHT

***Many U.S. FIs continue to rely on paper-based ID verification procedures that complicate the customer onboarding experience. What are some of the key reasons that have stopped FIs from digitizing their ID verification procedures and what kinds of ID verification tools hold the most promise to improve the onboarding experience?***

“Most traditional financial institutions and banks will leverage a variety of tools and third-party databases to corroborate the identity and risk assessment of a new customer. In fact, some larger banks use as many as 70 different solutions that are cobbled together to help address those fundamental questions of identity and risk. This can prove daunting when trying to digitize the process. According to Gartner, by 2023, 75 percent of organizations will be using a single vendor with strong identity orchestration capabilities and connections to many other third parties for identity proofing and affirmation, an increase from fewer than 15 percent today. Rather than having individual solutions pieced together, financial institutions should be looking for an identity proofing platform — like the Jumio KYX Platform — that combines services and technology like identity verification, biometrics, fraud signals, AML monitoring and authentication to accurately establish, maintain and reassert trust from account opening to ongoing transaction monitoring.”

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

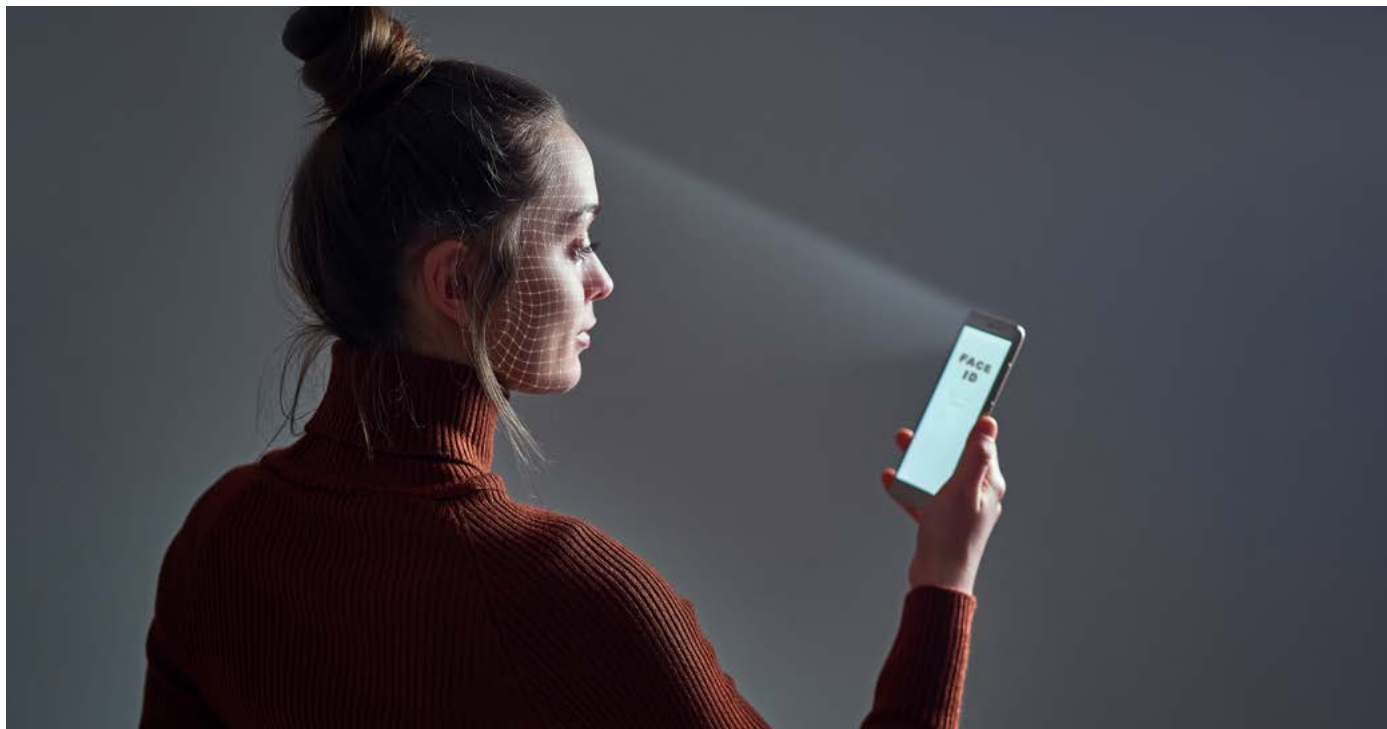
Bahrain-based Al Baraka Islamic Bank recently [announced](#) that it would team up with digital ID verification solution provider Jumio to boost its mobile onboarding procedures, for example. The FI said Jumio’s facial recognition technology would allow mobile banking app users to take selfies for comparison with official photo IDs during account sign-up. The solution uses liveness detection to ensure that legitimate customers are present when snapping their selfies.

Biometric solutions are also catching on for applications outside the banking sector. The U.S. Customs and Border Protection (CBP) agency recently [reported](#) that it conducted facial recognition scans on 23 million travelers in 2020 — a 21 percent increase from the 19 million scanned in 2019. The agency said that the scans achieved a match rate of more than 97 percent last year and noted that its officers have used the technology to spot seven impostors at airports and 285 in other settings since 2018.

For more on these stories and other digital ID headlines, read the Tracker’s News and Trends section (p. 10).

## **How real-time digital ID verification helps TD Bank strike the seamless and secure balance**

Many banks in the U.S. and Canada still believe customer onboarding and new account opening are best-suited for in-branch interactions, but the pandemic has forced FIs to reassess as more consumers turn to digital channels for their banking activities. Biometric tools, such as facial recognition, fingerprint scans and voiceprints, are just a



few methods banks can deploy not only to ease customer onboarding but also to offer real-time ID scoring and frictionless security, according to Angel Kadelski, head of U.S. mobile banking platforms for [TD Bank](#). In this month's Feature Story (p. 7), Kadelski discusses why the future of digital ID verification in the banking space will involve a combination of solutions to meet customer identification program (CIP) and KYC requirements.

### **Deep Dive: How banks can leverage innovative ID verification tools to modernize onboarding**

The pandemic has caused more consumers than ever to seek the convenience and safety of online

and mobile banking solutions, but more than half of banks in the U.S. and Canada still request that consumers prove their identities when opening new accounts online by visiting branches in person or submitting paper documents. This month's Deep Dive (p. 14) examines how banks can optimize digital ID verification during the onboarding process to both modernize the banking experience for users and deter them from abandoning account setup.

## FIVE FAST FACTS

50%

Portion of consumers who use mobile banking apps

31%

Share of consumers who are dissatisfied with their account opening experiences

88%

Portion of mobile banking app users who use their apps to check their account balances

90%

Segment of mobile banking app users who want more control over their identity authentication measures

28%

Share of mobile banking app users who say they would use them more if they had transaction-specific authentication controls

# TD Bank On The Case For Real-Time Digital ID Verification



# FEATURE STORY

When *The New Yorker* published its most [reprinted](#) cartoon in the magazine's history by cartoonist Peter Steiner in 1999, the internet — and digital identity — was still in its infancy. The cartoon featured a dog sitting at a desk, paw on a computer, saying, “On the Internet, nobody knows you’re a dog.” More than two decades later, the pandemic has created the perfect storm for shady cybercriminals to hide behind online anonymity to exact their schemes, with more consumers moving to digital channels for their daily activities than ever before. FIs and businesses fortunately have the opportunity to digitally confirm that users are who they say they are when communicating and transacting online.

The timing is right to accelerate the adoption of these tools to confirm consumers' identities with one or more biological traits. Digital ID solutions have become essential to onboarding for new account openings, though a [survey](#) by FICO found that only 49 percent of U.S. and Canadian banks use digital ID verification methods for these processes. The study further showed that just 16 percent of these banks use integrated, real-time digital validation tools for consumers to securely open financial accounts online.

Angel Kadelski, head of U.S. mobile banking platforms for [TD Bank](#), acknowledged that customer onboarding is still considered risky and best-suited for in-person interactions — especially when it



comes to CIP and KYC procedures and the general need to fight fraud. She said there are nonetheless opportunities for digital ID verification solutions to ease the customer onboarding experience, fulfill stronger CIP practices and protect FIs from cyberattacks.

“Digital ID solutions for customer onboarding can actually improve CIP and KYC practices because you can triangulate and verify the authenticity of various data points that you cannot achieve in a face-to-face interaction with a potential customer,” Kadelski said.

### **The importance of real-time verification**

Among the data points that can be combined to score an individual’s ID digitally, she said, are real-time validation of IDs matching government databases; cross-references with sanction lists; geolocation verification; biometric capabilities that use facial recognition to match consumers with photo IDs; credit bureau and social media data to confirm relationships between consumers and their businesses; and device identification to confirm that applicants are not bots.

Biometrics not only can simplify verification to keep customers from abandoning the process but also can help banks meet CIP requirements when in-person interactions are challenging — such as during a pandemic. TD Bank uses fingerprint and facial recognition biometrics to verify customers on its branded mobile app. The bank also enables customers to use voice recognition to confirm their identities. Customers who enroll in TD VoicePrint no longer need PINs, security questions or passwords. Selfie ID capture — or the comparison of a selfie against a government-issued photo ID — is

another method TD Bank uses to reduce customer frictions.

“I expect the use of both existing and new biometrics to expand to other use cases across digital, including within physical branches,” she said. “The reason is not necessarily to be a sole or primary authentication solution, but as an additional authentication method for customers who may have failed traditional means or may have been flagged for a high-risk transaction that needs an extra layer of verification.”

### **The customer convenience balance**

Kadelski noted that customers have come to expect convenience, especially as innovative digital experiences are being introduced at much faster rates across industries.

“Banks are left with having to meet those customer expectations to stay relevant and competitive with nontraditional FinTechs while also having to ensure they are providing safe and secure experiences,” she said.

Innovative ID solutions can address both sides of this balance if done right, she added. Smart identification processes that can score identities in real time across multiple categories can help banks eliminate barriers to onboarding new customers — or to satisfying existing ones as they come to expect frictionless, end-to-end experiences.

The future of digital ID verification will require a combination of solutions, including both biometrics and entity data. FIs that once relied on face-to-face interactions in-branch to prove customers’ identities will therefore need to rethink how to adapt to the pandemic-driven, digital-first economy.

# NEWS & TRENDS

## Digital ID and the rise of online banking

### **Most banks in US and Canada still require branch visits to open accounts**

Consumers are coming to expect smooth digital services in their financial lives, but recent research suggests that they are still facing hurdles when it comes to verifying their identities in the online banking space. A new [survey](#) from data analytics firm FICO revealed that 51 percent of U.S. and Canadian banks still require customers to prove their identities by visiting brick-and-mortar branches or posting copies of physical documents when opening accounts online. The study also noted that while the remaining 49 percent of respondents were using digital methods to verify customers' identities when they opened new accounts, just 16 percent were tapping fully integrated digital validation tools that allowed consumers to securely open accounts online in real time.

There is evidence to suggest that financial institutions are heeding the call to adopt more robust digital verification methods, however. Liz Lasher, a vice president at FICO, said the pandemic is

forcing U.S. and Canadian FIs that have relied on face-to-face interactions for identity verification to rethink their approaches. Seventy-five percent of the region's banks are planning to invest in identity management services by 2024, for example.

### **US bank customers face frictions regarding biometric usage and account opening, survey finds**

Even the FIs that are adopting emerging digital verification measures must ensure that they are utilizing these solutions to the fullest extent to keep customers satisfied. A new [survey](#) found that 30 percent of FIs are still asking customers to complete applications to open new accounts instead of offering secure authentication measures to ease the process. It also revealed that just 50 percent of U.S. banks allow their customers to alter personal details, such as their PINs, or to seek new debit products online, and most have failed to seamlessly enable remote account opening procedures using biometrics.

The report found that two-thirds of banks make it simple for customers to access new services, but consumers said that only 35 percent of these processes are easy to use. Seventy-five percent of

banks also require additional security verification measures when customers attempt to transfer money to external accounts. The survey concluded that biometric verification methods could go a long way toward helping FIs streamline their account opening processes and online banking transactions and ultimately prevent consumers from switching to other FIs.

### **Jumio partners with Al Baraka Islamic Bank on digital banking app leveraging biometrics**

Many FIs are recognizing the need to update their digital banking approaches, and some are turning to third-party partners to provide smooth verification methods for these new offerings. Bahrain's Al Baraka Islamic Bank recently [announced](#) that it is working with digital identity verification solution provider Jumio to bolster its mobile onboarding processes, for example. The FI will leverage Jumio's facial recognition platform to match mobile banking app customers' selfies with their official photo IDs, and liveness detection is employed to ensure that legitimate users are present when their selfies are taken.

The partnership will allow Al Baraka Islamic Bank's customers to open accounts via their mobile devices, freeing them from having to visit brick-and-mortar branches to provide identity documents. Dean Hickman-Smith, Jumio's chief resource officer, noted that the move will help the bank streamline its electronic know your customer (eKYC) verification procedures and give its customers a way to remotely and securely open accounts without relying on face-to-face interactions.

## Biometrics usage worldwide

### **US Customs and Border Protection reports 23 million travelers received facial recognition scans in 2020**

Biometric solutions are also witnessing increased usage outside the banking sector. The U.S. Customs and Border Protection agency recently [reported](#) that it used facial recognition scans on 23 million travelers last year — up 21 percent from the 19 million it scanned in 2019. The CBP said that these scans boasted a match rate of more than 97 percent in 2020 and that the technology has helped its officers discover seven impostors at airports and 285 in other settings.

Some have voiced concerns regarding the agency's use of facial recognition technology at airports, however, claiming that such solutions risk compromising individuals' privacy in the name of faster and more seamless security screening. Critics also point to research showing that the technology's error rates can differ for people of certain genders or ethnicities.

The CBP maintains that judiciously used facial recognition tools can have a positive impact on the travel space, especially during the pandemic, as they can reduce wait times, the need for physical interactions and the handling of paper documents all at once.

### **World Bank report notes biometrics' potential for pandemic-related aid delivery**

Myriad nations have rolled out initiatives to deliver financial aid to residents hit hard by the pandemic, and emerging evidence suggests that

biometric-based identification measures could be well-suited to verifying recipients. A recent World Bank [report](#) examined how such solutions could be used to help governments more accurately identify pandemic-related aid recipients and factor into nations' vaccine delivery plans. The World Bank pledged more than \$700 million toward its global efforts to bolster the implementation of digital identification and civil registration initiatives last year, it said.

The report comes after the FI conducted a workshop in December that focused on how nations' identification systems are affecting their responses to the pandemic and other events that require them to offer financial support to their residents. The workshop focused specifically on the adoption of biometric solutions to deliver benefits, including the Indian state of Jharkhand's usage of Aadhaar-based authentication to offer welfare aid to recipients and the utilization of biometric-based

verification methods for Pakistan's Benazir Income Support Programme.

### **SCA implementation has implications for biometric verification solutions in the EU**

The European Union's deadline for businesses to implement strong customer authentication (SCA), which requires card issuers to leverage multifactor authentication for all card-not-present (CNP) transactions, passed Jan. 1, [heralding](#) a shift in how the region's merchants will handle CNP payments. Customers will now be required to use at least two distinct verification methods when making CNP transactions, such as typing in passwords and verifying single-use codes delivered to their mobile devices to initiate payments.

eCommerce merchants have been skeptical about SCA's implementation because they worry that the stricter security measures will prompt more potential customers to abandon their carts.



Recent research shows that customers are more security-inclined than these retailers may realize, however, with a 2020 [survey](#) of 8,000 consumers revealing that 76 percent wanted stricter security measures when making payments online. One verification technology that holds particularly strong appeal for consumers who are prioritizing speed and security is biometrics, which is allowed under SCA. These tools can enable EU merchants to offer smooth checkout experiences while also complying with SCA mandates, meaning that biometric verification is likely to see increased implementation as time goes on.

## Digital ID developments

### **UK unveils framework for standards and rules governing digital ID applications**

Nations are looking to boost public confidence in the security of digital ID applications as a growing number of organizations implement them. The United Kingdom recently [issued](#) a draft detailing new guidelines, standards and rules governing the usage of digital ID solutions as well as how the information they leverage is shared with other firms and authorities. The UK Digital Identity and Attributes Trust Framework, which is eventually expected to become law, specifies that organizations must present data management policies detailing how data will be obtained, disclosed, protected and deleted. It will also outline industry standards for security and encryption and help consumers choose authenticators offering services that best fit their needs.

The move marks another step in the U.K.'s efforts to digitize consumers' identities and eliminate

the need for national ID cards. Emma Lindley, co-founder of the London-based nonprofit Women in Identity, said the government's collaborative approach to crafting a new digital ID framework is a step in the right direction toward accountability for all parties.

### **More organizations are turning to passwordless technologies during pandemic, report shows**

A global increase in cybersecurity threats during the pandemic is prompting more organizations to seek authentication measures that do not rely on passwords, according to a new [report](#). The report surveyed more than 425 IT professionals to examine key trends regarding the adoption of passwordless MFA technologies. Ninety percent of respondents said that their organizations had experienced phishing attacks in 2020, illustrating the vulnerability of firms that continue to maintain password-based verification solutions. The report noted that the uptick in fraud was prompting more of these firms to seek authentication measures that did not rely on passwords or shared secrets.

Almost 75 percent of respondents stated that replacing such legacy verification methods with smartphone-based passwordless solutions would provide the most seamless and convenient experiences. The report found that just 36 percent are using their mobile devices as Fast ID Online (FIDO) tokens, meaning they rely on unique security keys or some form of biometric identification to verify their identities. This reveals that more education and communication could be necessary to help organizations recognize the security benefits of adopting passwordless authentication solutions.

# DEEP DIVE

## Modernizing The Banking Experience With Innovative Identity Verification Strategies

The pandemic has driven more consumers to seek the safety and convenience of online banking, yet new data has revealed that banks in Canada and the U.S. may not be doing enough to protect against identity theft or money laundering for the increased volumes of digital banking users. FICO recently [reported](#) that a majority of U.S. and Canadian banks still require customers to prove their identities by visiting branches or submitting documents when opening accounts online. The requirements were similar for 25 percent of mortgages and 15 percent of credit cards opened online as well.

Digitizing legacy onboarding processes calls for banks to enable online account opening while simultaneously adopting identity verification solutions to protect new customers' information. FICO's Consumer Digital Banking study [revealed](#) that just 16 percent of U.S. and Canadian banks offer the ID validation tools required to securely open accounts online. The study also showed that while 75 percent of consumers would be willing to open a bank account online, 23 percent

would abandon the onboarding process if ID verification proved to be too inconvenient or complex. The other challenge financial entities face is that customers have to be willing to help protect themselves for banks' identity protection strategies to be most effective. Only 18 percent of FICO respondents [said](#) they used password management software, and another 18 percent said they simply write their passwords down, leaving much room for improved security.

This month's Deep Dive examines the current state of the customer banking experience and how banks are leveraging innovative identity verification tools to modernize their onboarding processes and prevent users from abandoning account setup.

### **How biometrics helps narrow the ID verification divide**

Making sure that customers' identities are genuine when they sign up for new accounts is the main factor driving most banks to revamp their digital ID verification strategies, with 51 percent of bank executives in one recent study [stating](#) as much. There are several challenges that FIs must first address before putting robust tools into place, however. Banks have strict compliance standards they must meet for onboarding and managing customer information, for example. Meeting those



requirements was the top concern of 53 percent of banking executives in one recent [study](#) when innovating their ID verification strategies.

FIs thus need identity solutions that allow them to comply with digital privacy guidelines and updated financial regulations without adding friction to the onboarding experience. This means moving away from branch visits and paper documents to tools that can identify consumers based on data they have readily available — such as their fingerprints or voices. Biometrics could add the necessary security and speed to ID verification to keep up with both regulatory requirements and consumers' demands.

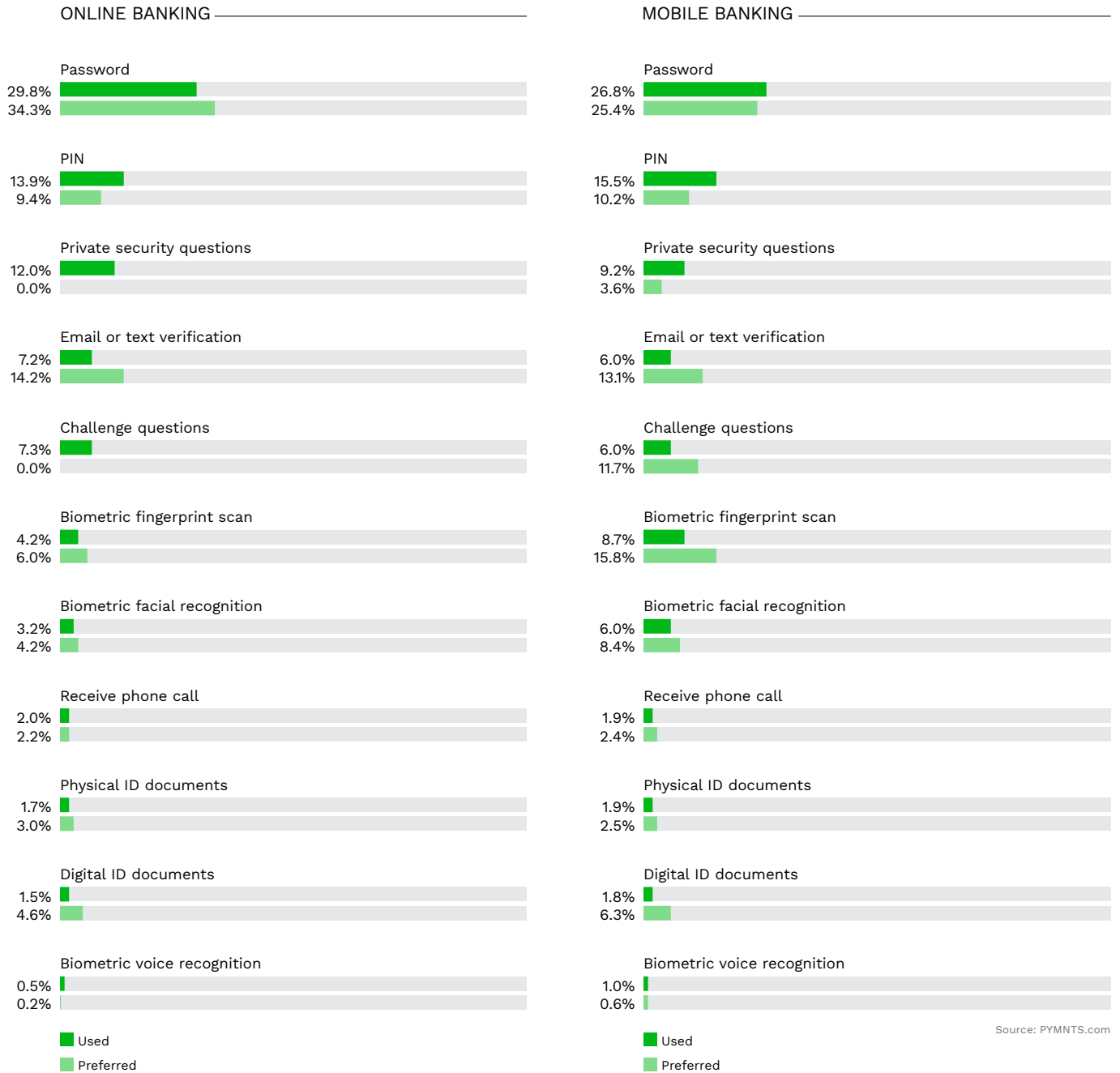
The good news is that consumers globally are becoming more comfortable with biometrics as their method of choice when verifying their identities online: One recent [study](#) of banking users in the U.K. indicated that 71 percent would provide

biometric data to their chosen FIs. The most popular biometric method appears to be fingerprint scans, with 48 percent of U.K. consumers saying they would be comfortable providing their fingerprints to banks to access their accounts or verify their identities.

This comes as more smartphone manufacturers graft fingerprint scan capabilities into their devices, making biometric tools more accessible to the growing number of consumers who are banking via mobile. American consumers are less enthusiastic about biometrics than their U.K. counterparts, but the technology's popularity is slowly increasing among mobile users. Nearly 16 percent of U.S. mobile banking users in a recent PYMNTS [study](#) stated they preferred to authenticate themselves using fingerprint scans, though only about 9 percent said they actually used this method to access their accounts.

FIGURE 1:

Authentication methods for U.S. online and mobile banking users, by method used and method preferred



Source: PYMNTS.com

This gap between preference and actual usage may exist for several reasons, including the possibility that available biometric options do not offer the speed or security that users would like. Closing this gap could be critical for FIs looking to engage and onboard consumers digitally in the coming years. Many FIs may still face barriers in doing so, however, because consumers are asking not just for biometrics but instead for a whole fleet of digital options from their banks when signing up for new accounts.

### Optimizing ID verification for a mobile-first world

Focusing solely on biometrics could be the wrong move for FIs, as consumers appear to be requesting a wide variety of emerging ID verification solutions from potential financial partners. One of the most important factors driving consumers' choice of verification type — and choice of bank — is whether the method is optimized to the banking

channel they are using to onboard. Consumers are searching, in other words, for solutions that are not only digital but also mobile-first.

Tailoring ID verification solutions to run seamlessly on mobile could give FIs a key advantage over their competitors. Consumers are even willing to provide the typical documents FIs need when onboarding as long as they can do so via their phones' cameras. One recent [study](#) found that two out of three U.S. consumers would be willing to take photos of their ID documents as long as doing so would make the onboarding and verification processes safer, faster and more secure.

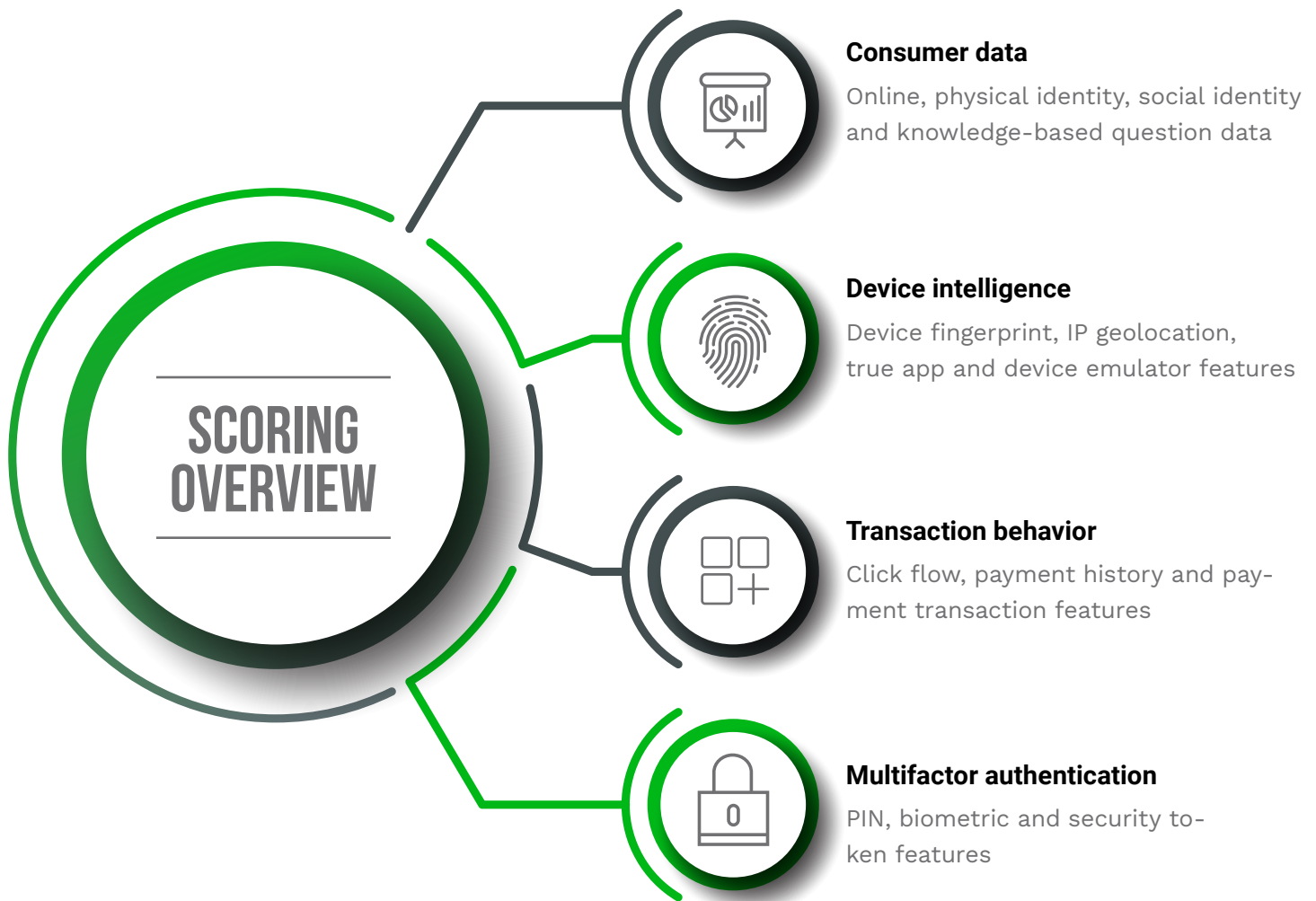
Staying on top of this rising preference for mobile-first banking requires that FIs approach their ID verification and onboarding strategies so that they work together in a cohesive way. Failing to do so will see banks fall behind on the digital banking curve.



# 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 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 |
|               | ✓        |        |                           |     |            |             | ✓          |                 |



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

**Products:** nKode

**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.



**A U 1 0 T I X**

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.



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.

**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

| 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 |
| ✓             |          | ✓      |                           |     |            |             |            |                 |



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.



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.

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

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

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



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.

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

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

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



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.

**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

| 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**  
Be Proactive. Defend.

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 |
|               | ✓        |        |                           |     |            | ✓           |            |                 |



Irisys is a biometric security company specializing in biometrics and iris recognition technology. It is currently the only iris recognition security USB memory device manufacturer in the world.

**Products:** Iris recognition USB; one-time passwords; ATM, point of sale, safe box and smart home security; smartphone biometrics

**Customer Focus:** Businesses, consumers

| 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.



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 |
|               | ✓        |        |                           |     | ✓          |             |            |                 |



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 |
| ✓             | ✓        | ✓      |                           |     |            | ✓           |            | ✓               |

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



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 |
| ✓             | ✓        |        |                           |     | ✓          |             |            |                 |



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 |
| ✓             |          |        | ✓                         | ✓   |            | ✓           |            |                 |



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 |
|               | ✓        |        |                           |     |            | ✓           |            | ✓               |



MYPINPAD 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.

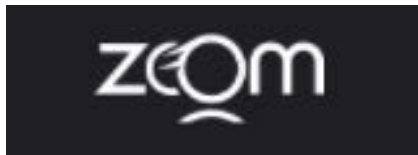


VoiceTrust offers biometric authentication experiences that are ISO 9001 and Common Criteria compliant. The products include biometric solutions consulting, solution deployments and customer support. Its voice-, face- and knowledge-based identity verification solutions are used across North America,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

**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 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 Fingerprint.

**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.



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.

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

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

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



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.

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

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

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



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.

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

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

| 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.



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.

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

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

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



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

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



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.

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

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

| 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

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 |
| ✓                     |                |                  |                                | ✓   | ✓          | ✓           | ✓          | ✓               |



PrivaKey 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.



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 and universal second factor.

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

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

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



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.

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

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

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



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

**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

| 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 Behavior biometric solutions for risk-based authentication of end users. Behavior biometrics 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 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 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'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 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

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