



IDENTITY

NOVEMBER 2015

TRACKER™

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COVER STORY

A Lesson In IOT Security. ..One Size Does Not Fit All

The Internet of Things first became a “thing” in 1999 when British technologist and innovator Kevin Ashton coined the term.

The insight that he saw – a decade or so before the concept became part of the mainstream tech narrative – was that computers were deprived of their fullest potential because they relied on humans to operate them. As smart as human brains can be, Ashton posited, they are simply incapable of processing billions upon billions of data bits, and make decisions in real time on the basis of the insights from those data.

His vision was that millions of machines connected to each other via the Internet would pass data back and forth between them, rely on sophisticated analytics to crunch the data and then take action based on that analysis – all in real time and all without the need for humans to intervene. The Internet of Things was the term of art that he used to describe the “things” that the Internet would connect and empower with data.

The Internet of Things game changer, of course, is allowing this “data exchange” to happen across multiple devices residing in disparate environments – and outside of the four walls of any single proprietary organization. The backbone of this data transfer is, of course, the commercial Internet.

Making it more concrete, it’s a framework that will allow a patient’s vital signs to be monitored in a hospital via a sensor in her hospital bed, and relay medication and outreach needs to doctors and nurses at programmed intervals and send updates to family members. The Internet of Things will also monitor hospital pharmacy inventory in real time based on what that patient might require and trigger replenishment as needed, updating billing records and charging patients as medication is administered, and monitoring the productivity of hospital staff to properly record time and manage workflow. It’s also a framework that will allow a pharmacy within geographic proximity of the patient’s home to be notified 24 hours in advance of her discharge so that an adequate supply of medication is on hand, and for that medication to be filled, charged to her card on file and delivered to her home at the appropriate intervals.

Gartner says that there will be more than 6.4 billion such connected devices, all containing the three characteristics necessary to enable the Internet of Things vision as described:

- The device must have a sensor capable of ingesting data about its environment;
- The data from these devices must be transmitted to another device when selected conditions are met, and;
- The device must be capable of taking an action automatically.

IoT AND SECURITY – THE CRITICAL LINK

We think that there’s a fourth requirement: that the digital identity of the individuals who are impacted in some way by this data exchanged be preserved. That task becomes more and more complex in environments that increasingly include mobile devices and in which every interaction with a connected device has the potential to enable commerce. Here’s why:

First, there are great debates raging over what even constitutes an “identity” in a world where every connected device will have its own identity that must be kept secure – but where that device must interact with multiple identities of the individuals who are part of this data exchange. That transmission of data to and from these devices must be capable of interacting securely with each other, and instantaneously.

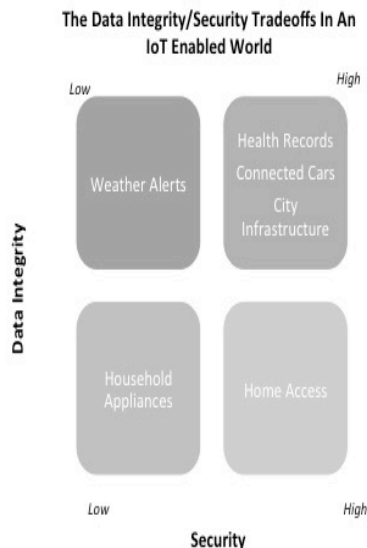
COVER STORY contd..

Who Will Secure The Internet of Things?

Take connected cars, for example.

In the not too distant future, all cars will come equipped with a modem and their own identities, identities that must be securely stored so that information related to the identity can be transmitted via IP addresses to other devices inside that car. That device may be something related to the car itself – an operating system inside the car, or a mobile device carried into the car by a driver. Or multiple drivers, more likely, each with their own “connected” device privileges managed via an app. Those apps (or app) could be linked to third-party wallets or digital accounts that enable access to gas stations, play music from Spotify, and even usage-based insurance coverage with different rates and driving privileges that must also be monitored on an individual basis and synched with the car’s identity.

In the Internet of Things world, the car is a “device” with its own identity that must be kept secure, yet enable secure access and transmission of secure data for those who are interacting with it via their own devices, including enabling payments. And all of this must be done without interfering with the flow of data that is moving between cars and drivers and the various devices that they will be interacting with while in the car in real time: car telematics, GPS for navigation, mobile order ahead at QSRs, parking availability and payment, etc.



That then feeds the second debate: the appropriate enabling technology to secure the digital identities stored in these connected devices that comprise the Internet of Things ecosystem.

THE SPECTRUM OF IoT SECURITY

Tokens, HCE, secure elements, and embedded secure elements are four of the most commonly used enabling technologies for making digital identity across the spectrum of devices both secure and interoperable. Second to securing the digital identity of a consumer is authenticating that consumer across a spectrum of devices – cars, appliances, wearables, computers, and any other connected device that has the potential to be linked to her.

Advocates of the secure element (SE) speak to its tamper-resistant ability to store personal data and use of cryptographic features as the foundation for creating a digital identity that is hard to exploit. The network of SE issuers and token services providers serve as the intermediaries whose job it is to ensure that access is secure.

COVER STORY contd..

Who Will Secure The Internet of Things?

HCE advocates offer that its cloud-based “secure element” can enable a digital identity that is just as secure as its chip-based SE counterparts, but afford access and provisioning privileges that create a more flexible and scalable deployment. Tokenization advocates offer proof that tokens have kept sensitive data secure for years since tokens make data unusable even if the “containers” in which tokenized data is kept is compromised.

IS ESE IoT’S ESSENTIAL ELEMENT?

Those who advocate eSE – or embedded secure elements – argue that in the IoT space, eSE is critical given its ability to secure data at the end points of the devices that connect to enable the Internet of Things vision.

Marek Juda, Executive VP and Managing Director Connected Device Makers at Oberthur Technologies, illustrates the importance of eSE in end point devices, distinct from cloud security. “Cars are a clear example showing why end point security is necessary,” said Juda. “It started a few years ago with connectivity, but that alone is not enough; you need to secure the device that is connected to the cloud, to make sure that no one can compromise the data before it is transmitted.”

He noted that the discussion escalated pretty quickly from connectivity to security in the IoT sphere with distinct use cases with reference to tokenization and eSE. While tokenization protects the transfer of data, it does not prevent compromise and interception of the end device, which is of essence in the IoT space where every device is a credential in itself. However, that is not to say that they work independently. “Tokenization in payments is compatible within eSE approach and there are a lot of people asking to bridge the two for IoT devices,” Juda said.

However at this nascent stage, it is impractical to have eSE in every device and have it be interoperable. “Some devices at home may not require this – closing the blinds or turning the heat on and off. But there are specific use cases implying high security and high liability, in particular the connected car, or for example city lighting systems..- Take smart meters as another example: following data interception and manipulation the power company can just shut off power to your house because they think you didn’t pay the bills,” Juda said .

Proving that identity is only as secure as the device that’s entrusted to protect it, Juda asserts. Otherwise, bad things can happen to good people.

WHAT'S INSIDE

Cash is not archaic, it's adapting. While most in the industry are trying to make payments invisible, German ATM manufacturer Wincor Nixdorf is taking the latest technology to cash. The company will launch an ATM that will allow customers to [withdraw cash](#) using a smartphone or a near-field communications (NFC) card. Accountholders use these Smart ATMs through the banking app.

Diebold, an Ohio-based ATM manufacturer, partnered with SimplyTapp, a mobile near field communications ([NFC payment](#)) and host card emulation (HCE) technology company, to offer a bank-branded NFC mobile wallet solution which can be activated through ATM authentication.

Continuing the pursuit of making hardware smart and secure, NXP Semiconductors, the co-inventor of NFC technology, will implement its [Loader Service solution](#) into MasterCard's payment ecosystem to make any IoT appliance a payment device.

This is just one of MasterCard's efforts to transform and integrate payments. The company has been investing significant amounts toward tokenization and security. It plans to bring [tokenization](#) to both MasterPass and [commercial](#) credit cards using the MasterCard Digital Enablement Service (MDES).

Ten years since its application to payments, tokenization continues to be a go-to solution for secure payments and data protection. Needless to say, players in the industry also recognize its adaptability. Debit card payment network eftpos recently partnered with Bell ID to provide secure tokenization [services](#) to the Australian payments industry.

Anti-fraud technology provider Early Warning also launched the [Authentify Platform](#) which brings together multiple modes of authentication in one solution. A single API will help merchants tap into authentication methods that ensure safer online, mobile or in-store transactions.

Additionally, transaction technology provider Carta Worldwide introduced an appliance-based turnkey solution that aims to reduce the time it takes for large banks, processors and domestic networks to bring tokenized HCE mobile payment services to market. The [Token Processing Appliance](#) (TPA) puts together all of the required components that will be needed to deliver this type of solution, including the hardware, software, security modules and the testing certification pieces, all into a single package.

November Tracker Updates

This issue also includes the profiles of 83 industry players, with 5 new profiles — Arcanum Technology, Bluefin Payment Systems, Early Warning, EyeVerify and Transaction Network Services — and three updated companies: AU10TIX, Feedzai and Gemalto, with updates covering company solutions and country coverage.



THE DIGITAL IDENTITY ECOSYSTEM

The Digital Identity Ecosystem lists the new providers added in each of the four key digital identity capability areas.

STORE

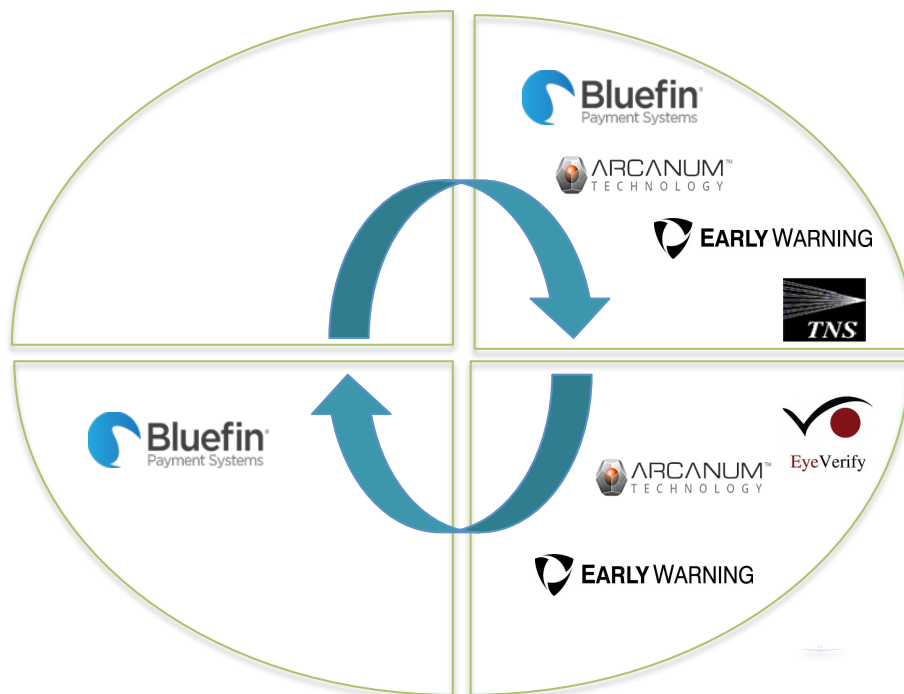
Safely store sensitive information

- Big data and analytics
- Cloud storage
- Data encryption
- EMV card and chip providers

INTERACT

Manage the process of moving sensitive data between entities

- End-to-end encryption services
- Networks/gateways/ecosystem
- Payment services



GENERATE

Create account number, ID or credentials used to access account or transaction

- Certification authorities
- Tokenization providers

SECURE

Ensure the user is who they say they are

- EMV and smart card technology and software solutions
- Data and device profiling
- Biometric companies

NEWS AND TRENDS

Generate

Creating the identities and credentials that allow individuals to digitally identify themselves in a host of environments

Tokenization picks up steam through MasterCard, eftpos solutions and Gemalto

MasterCard will integrate its [tokenization](#) services within MasterPass and provide the same service to commercial credit card issuers. MasterCard will also [enable](#) corporations and business travellers to load eligible corporate credit cards within participating mobile and digital wallet services using the MasterCard Digital Enablement Service (MDES).

Separately, debit card payment network eftpos will use Bell ID's platform to provide secure tokenization [service](#) to the Australian payments industry.

Gemalto will [provide](#) mobile payment solutions to Dai Nippon Printing (DNP) for its financial services clientele in Japan.

Additionally, transaction technology provider Carta Worldwide introduced an appliance-based turnkey solution that aims to reduce the time it takes for large banks, processors and domestic networks to bring tokenized HCE mobile payment services to market. The [Token Processing Appliance](#) (TPA) puts together all of the required components that will be needed to deliver this type of solution, including the hardware, software, security modules and the testing certification pieces, all into a single package.

Arcanum Technology leverages passwords

Athens-based startup Arcanum Technology has [developed](#) a more secure way to leverage passwords for online payments or account opening. The solution, N-Kōd, features an algorithm that generates a complex series of tokenized values to ensure the customer's actual passcode is never exposed.

MorphoTrak has launched its Morpho Cloud Identification-as-a-Service platform

MorphoTrak has launched its Morpho Cloud [IaaS](#) (Identification-as-a-Service) platform, a cloud service for MorphoBIS, Morpho's Biometric Identification Solution. The new platform is hosted on a platform designed specifically to serve the U.S. government. Microsoft Azure Government – and by extension Morpho Cloud – adhere to the FBI's CJIS Security Policy, and comply with “the stringent security standards for storage, transmission, monitoring and recovery of digital information.”

NEWS AND TRENDS CONT'D

Store

Storing identity and credential data on physical devices and in the cloud

Thanks to MasterCard and NXP, smart appliances will become payment devices

NXP Semiconductors, the co-inventor of NFC technology, will implement its [Loader Service solution](#) into MasterCard's payment ecosystem to make any IoT appliance a payment device. By loading an applet into NXP's secure elements, the solution will work with NXP's range of secure mobile transactions products, providing an EMV certified solution.

Oberthur delays IPO, lands key deal in Costa Rica

Citing concerns about market strength, Oberthur Technologies put a hold on its [IPO](#) plans. Oberthur's sales are projected to exceed \$1.2 billion, and about 60 percent of that comes from financial services, such as payment cards and chips for mobile payments. Owned largely by private equity group Advent International, Oberthur was seeking to raise \$550 million to \$650 million on Paris' Euronext market to pay debt and fund research into digital security for connected objects — from bathroom scales to cars. That listing is now looking more likely to occur in 2016. For now, the company is gung ho about [growth](#). Oberthur CEO Didier Lamouche noted that 2015 has been a banner year for the company garnering nearly 40 percent market share in the US fueled by the EMV migration.

Separately, the leading embedded digital security company [entered](#) a multi-year contract with Costa Rica to provide secure national ID cards to its citizens.

NEWS AND TRENDS CONT'D

Interact

Sharing identity credentials between originating and relying parties

Bluefin to provide USAePay clients with PCI-validated Point-to-Point Encryption protection

Payment gateway USAePay has partnered with Bluefin Payment System (which recently joined the [Applied Partner Program](#)) to enhance data security through Bluefin's Decryptx, a [PCI-validated Point-to-Point Encryption](#) (P2PE) service which protects consumer payment data in transit. Decryptx encrypts all data within a PCI-approved point of entry swipe or keypad device, preventing clear-text cardholder data from being available in the device or the merchant's system, where it could be exposed to malware.

Diebold, SimplyTapp offer mobile wallet with ATM authentication

Diebold and SimplyTapp, a mobile near field communications ([NFC payment](#)) and host card emulation (HCE) technology company, have partnered to offer a white-label mobile wallet with card present security through ATM authentication. Customers using the service will first authenticate themselves at an ATM, using their debit card and PIN. Once authenticated, they will be able to set up a bank-branded NFC mobile wallet.

Wincor Nixdorf reinvents the ATM experience

ATM manufacturer Wincor Nixdorf is launching an ATM that will allow customers to [withdraw cash](#) using a smartphone or a near-field communications (NFC) card. Accountholders can use these Smart ATMs with the help of a mobile banking app, where they receive a QR code for scanning. Users can withdraw cash using an NFC card, and bank customers are able to enter their PINs using a special encrypting touch sensor.

Early Warning streamlines authentication

Anti-fraud technology provider Early Warning has launched the [Authenticate Platform](#). The platform brings together multiple modes of authentication in one solution. Through a single API, merchants can tap into authentication methods that ensure safer online, mobile or in-store transactions including two-factor out-of-band via voice and SMS; mobile network operator intelligence; voice, fingerprint and behavioral biometrics; near field communication (NFC); threat detection; device binding; and secure messaging.

NEWS AND TRENDS CONT'D

Secure

Authenticating digital identities and keeping data safe

Cyberattacks on health care providers could cost \$305 billion in five years' time

Report from Accenture show that cyberattacks over the next five years could cost [U.S. health care systems](#) \$305 billion in cumulative lifetime revenue. Accenture estimates that one in 13 patients (or approximately 25 million people) could have personal information or financial records stolen from health care technology systems over the next five years. Proactively addressing cybersecurity can improve a provider's ability to thwart attacks by an average of 53 percent, the report found.

Nok Nok Labs updates its mobile authentication suite

Nok Nok Labs launched its latest version of the [Nok Nok S3 Authentication Suite](#) as part of its vision for enhanced omnichannel mobile authentication. The Nok Nok S3 Authentication Suite is for organizations deploying customer-facing applications that require biometric authentication. This latest version includes fingerprint-enabled authentication on leading mobile devices. It leverages FIDO capabilities to authenticate logins.

Computop, CardinalCommerce partner to reduce online and mobile commerce fraud

Computop, a payment service provider, and Cardinal Commerce, a pioneer in the remote payments industry, have partnered to minimize fraud in online and mobile commerce. Through the partnership, Cardinal's [rules-based Consumer Authentication](#) will be available to Computop Paygate customers, providing retailers in the U.S., Europe and other key international markets with secure payments for their eCommerce and mobile operations, including cross-border transactions.

Google Play Store rolls out fingerprint authentication

Google's Nexus Imprint, the fingerprint authentication feature offered in the new Nexus 5X and 6P smartphones, can also be used to make purchases on the [Google Play Store](#).

OTHER NEWS

Oberthur wins three awards at CARTES Secure Connexions Conference

Oberthur Technologies, a leading embedded digital security company won three awards at the CARTES Secure Connexions Conference for 'Best Connected Objects Applications,' 'Best Mobile Security Solution' and 'Best Transportation Application.'



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CUSTOMERS/VOLUME	17,000 merchant accounts 30,000 users handling corporate, government and eCommerce payments
CUSTOMER FOCUS	Manufacturing, Consulting, Engineering, Transportation, Supply
LAUNCH DATE	1999

3Delta Systems, Inc., based in Chantilly, Virginia, is an innovative payment solutions company. 3DSI recently surpassed a lifetime processing milestone of \$100 billion. Since 1999, 3DSI has served more than 7,000 corporations and government agencies.



CUSTOMER FOCUS	Financial Institutions, Payment Services Providers, eCommerce, Travel
GEOGRAPHIES	North America, Germany, United Kingdom, Asia
LAUNCH DATE	2004

41st Parameter, part of Experian, is the global leader in device recognition and intelligence using patented technologies and have years of expertise to identify devices without cookies, without compromising privacy and without impacting performance.

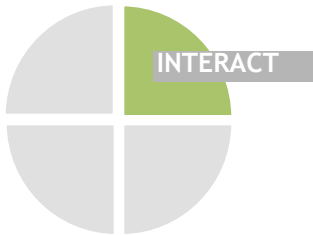


LAUNCH DATE	1795
CUSTOMER FOCUS	Retail, Financial, Government, Hospitality, Education, Transit
GEOGRAPHIES	North America, Europe, Africa, and Australia

ABnote's primary products include financial cards, identification and credential cards, transit cards, hotel, facility and theme park access cards and membership programs, retail plastic cards, barcodes and labels, and secure documents.



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KEY PRODUCTS	Fraud Protection, Chargeback Management, Payment Gateway Solutions
CUSTOMER FOCUS	Travel, Retail, Digital Download, Social Network
LAUNCH DATE	2007

Accertify. Inc., a wholly-owned subsidiary of American Express, offers a suite of products and services that help eCommerce companies grow their businesses by driving down the total cost of fraud, simplifying business processes, and ultimately increasing revenue.



CUSTOMER FOCUS	Consumers, Merchants, Issuers and Financial Institutions
KEY PRODUCTS	Internet PIN Debit, Authentication Services
LAUNCH DATE	2008

Acculynk secures online transactions with a suite of software-only services backed by a patented authentication and encryption framework that provides greater security for issuers, EFT networks, merchants and payment processors.

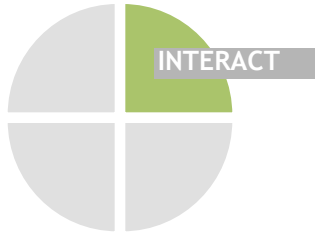


CUSTOMERS/VOLUME	ACI has more than 5,600 customers, including 18 of the Top 20 banks and 300 of the leading retailers globally.
CUSTOMER FOCUS	Banks, Retailers, Billers and Processors
LAUNCH DATE	1975

ACI Worldwide, the Universal Payments company, powers electronic payments and banking, processing \$13 trillion each day in payments and securities transactions.



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LAUNCH DATE	2009
CUSTOMER FOCUS	eCommerce, Mobile Commerce, Mail/Phone Order, Call Center and Brick-and-Mortar channels

Adaptive Payments is a payment authentication company that enables easy, safe, secure and authenticated transactions to occur using the cardholders' PIN or other data known to the cardholder, to authenticate debit and credit transactions.

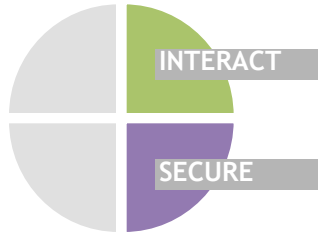


CUSTOMER FOCUS	Government (Criminal Identification), Contact Centers, Financial Services, Telecommunications and Enterprises
GEOGRAPHIES	35 Countries
LAUNCH DATE	2004

AGNITiO offers worldwide market Voice ID products. AGNITiO's Voice ID is used by government organizations to prevent crime, identify criminals and provide evidence for lawsuits in over 35 countries. AGNITiO's Voice ID Products are also used by a number of leading customers and partners in contact centers, financial services, telecommunications and enterprise security sectors.

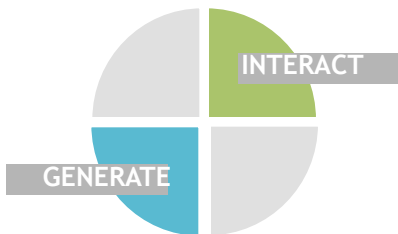


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CUSTOMERS/VOLUME	107.2 Million cards in force
CUSTOMER FOCUS	Consumer, Small Business, Merchant
GEOGRAPHIES	137 Countries

American Express, incorporated on June 10, 1965, is a global financial services company. The company's principal products and services are charge and credit payment card products and travel-related services offered to consumers and businesses worldwide.



CUSTOMER FOCUS	Financial Services Organizations, Banks, Online Merchants
PRODUCTS	N-Kōd Secure Authentication

Arcanum Technology provides an innovative and cost-effective authentication solution that helps financial services organizations, banks and online merchants create a safe and secure business environment for their customers. The company's breakthrough N-Kōd system elevates the authentication process with an expanded character set and an innovative cypher algorithm that generates a series of tokenized values in every step of the process.



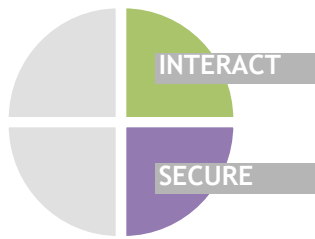
REVENUE	\$182.8 Billion
KEY PRODUCTS	Touch ID Apple Pay
GEOGRAPHIES	147 Countries

Apple Inc. designs, manufactures, and markets personal computers and related personal computing and mobile communication devices along with a variety of related software, services, peripherals, and networking solutions. Apple introduced Touch ID, a fingerprint recognition feature, available on iPhone 5S, 6, and 6 Plus.



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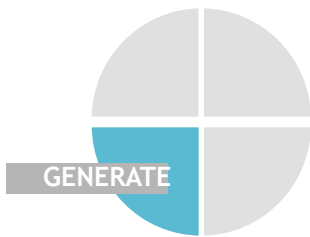
ARM®



CUSTOMER FOCUS	Automotive, Consumer Entertainment, Digital Imaging, Mass Storage, Networking, Security, Wireless Industries.
KEY PRODUCTS	Processors, Multimedia, Physical & System IP, Development Tools, Security, Internet of Things
LAUNCH DATE	1990

ARM designs scalable, energy efficient-processors and related technologies to deliver the intelligence in applications ranging from sensors to servers, including smartphones, tablets, enterprise infrastructure and the Internet of Things. The ARM business model involves the designing and licensing of IP rather than the manufacturing and selling of actual semiconductor chips.

arroweye



CUSTOMER FOCUS	Financial Services, Retail and Merchant Services
KEY PRODUCTS	Payment Card Solutions, On-demand, Customized Card Marketing and Production
LAUNCH DATE	2000

Arroweye offers the first fully digital card solution approved by Visa, MasterCard, American Express and Discover, and the company continues to partner with some of the largest prepaid, credit/debit card programs in the financial and card services industries.

AU10TIX



CUSTOMER FOCUS	Airports, Secured facilities, Regulated Commercial and Public Services
KEY PRODUCTS	Front-end solutions (ID Identification), solutions
GEOGRAPHIES	90 countries

AU10TIX Limited is a pioneer of multi-channel (front-end, online, mobile) ID authentication and record generation solutions. The company develops and implements solutions that automate the capture, authentication, validation and generation of digital records of identifying documents such as passports, identity cards, driver's licenses, etc. AU10TIX Limited is a subsidiary of ICTS International B.V (Established in 1982; NASDAQ symbol ICTSF) — a global provider of security services and solutions for airports, border crossings and sensitive facilities.



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CUSTOMER FOCUS	Financial Services, Government, Health Care
KEY PRODUCTS	Authentication
LAUNCH DATE	2009

Authasas was founded in 2009 and is headquartered in Amsterdam, The Netherlands. Authasas is a software development and marketing company dedicated to delivering strong authentication to the global marketplace.



CUSTOMER FOCUS	Banks, Payment Processors, Perso. Bureaus, Mobile Network Operators, Government
PRODUCTS	HCE, Tokenization, Secure Element and Smart Card Management, EMV Migration
LAUNCH DATE	1993

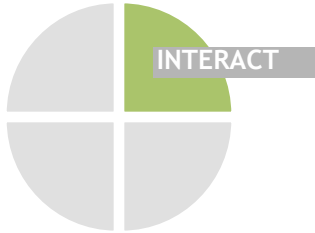
Bell ID's software issues and manages credentials on smartphones, smart cards and connected devices. It integrates with third party technology and simplifies the issuing complexities of payment, identity, loyalty and transit applications. Bell ID has the expertise to manage the lifecycle of any application on chip card as well as NFC-enabled mobile device.



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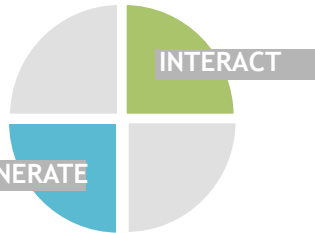


Bitnet



CUSTOMER FOCUS	Enterprise-Scale Merchants
PRODUCTS	Digital Commerce Platform
LAUNCH DATE	2013

Bitnet provides a digital commerce platform enabling enterprise-scale merchants to accept bitcoin payments. Bitnet has offices in San Francisco, California, and Belfast, Northern Ireland.



CUSTOMER FOCUS	Enterprises, Financial Institutions, SMEs
PRODUCTS	PayConex Platform, P2P, Tokenization
LAUNCH DATE	2007

Bluefin Payment Systems provides secure payment technology for enterprises, financial institutions and small- and medium sized businesses worldwide. Bluefin's innovative and proprietary PayConex Platform includes PCI-validated Point-to-Point Encryption (P2PE), QuickSwipe mobile POS, eCommerce, tokenization, international payments and more.

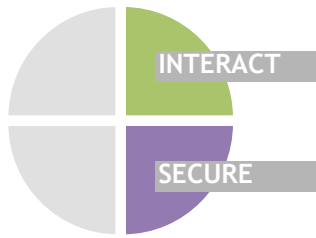


CUSTOMER FOCUS	Financial Services, Homeland Security, Mobile Payments, Hardware, Software, Marketing, Health Care, Identity Fraud
CUSTOMERS/VOLUME	6 of the Top 10 global banks
PRODUCTS	Omni-channel Fraud Scoring; Credit Risk & Chargeback Prevention; Anti-money Laundering; Data Breach Detection; Others

Brighterion offers the world's deepest and broadest portfolio of artificial intelligence and machine learning technologies which provides real-time intelligence that matters from all data sources, regardless of type, complexity and volume.

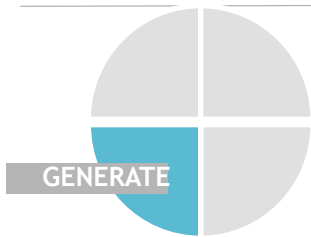


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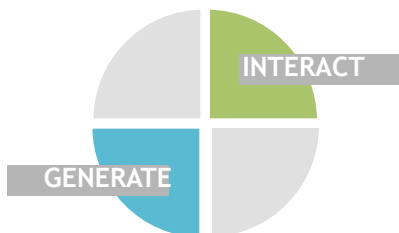
GEOGRAPHIES	United States, Europe and Africa
CUSTOMER FOCUS	Merchants and Banks
KEY PRODUCTS	Consumer Authentication, Alternative Payments, Mobile, Big Data, Solution Design

CardinalCommerce has been enabling authenticated payment transactions in the card-not-present payments industry since 1999. Cardinal services, partners with and complements providers to deliver their one connection solution to secure transactions.



CUSTOMER FOCUS	National ID, Health Care, Gaming, Stored Value.
GEOGRAPHIES	36 countries
PRODUCTS	Smart Cards, Cards, Software, Readers & Terminals

Since 1998, CardLogix has manufactured cards that have shipped to more than 36 countries around the world. With expertise in card and chip technology, as well as card operating systems, software, development tools, and middleware, CardLogix has been at the forefront of smart card technology.



CUSTOMER FOCUS	OEMs, Banks, MNOs, Merchants, Program Managers
KEY PRODUCTS	Cloud-Based Payments and Host Card Emulation (HCE), Tokenization, and Value-Added Services
LAUNCH DATE	2007

Carta Worldwide is an award-winning leader in digital transaction processing and enablement technologies, including cloud-based payments and host card emulation (HCE), tokenization, and value-added services such as digital offers, loyalty and stored value solutions. Carta empowers OEMs, banks, MNOs, merchants, program managers and others to enable existing cardholder accounts or issue new and innovative products for the digital world.



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CUSTOMER FOCUS	Mobile
KEY PRODUCTS	Mobile TrackPad, Touch Solutions, Mobile Flash Solutions
LAUNCH DATE	2001

Ciptor is a value-added specialty distributor of IT Security – taking award-winning vendors to customers in Scandinavia, EMEA and Asia Pacific. Ciptor supplies software and solutions to enterprise, business and government customers in the region.



CUSTOMER FOCUS	Bank Operators, Telco Operators, Integrators, Cybersecurity Companies, Retailers
KEY PRODUCTS	Payment, Proximity Detection, Access & Security, IoT
LAUNCH DATE	2013

CopSonic is a carried spin-off launched in September 2013. CopSonic develops and markets a SDK for sonic and ultrasonic multi-factor authentication. The CopSonic technology is a new universal contactless communication protocol for security, payment and tracking. It is already available for 30 billion smart devices existing worldwide, including: feature phones, smartphones, tablets, TV-box, computers, game consoles, and Internet of Things devices.



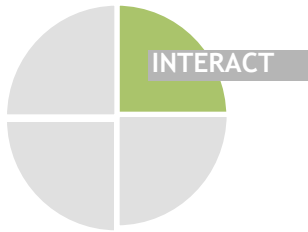
CUSTOMER FOCUS	Mobile
KEY PRODUCTS	Mobile TrackPad, Touch Solutions, Mobile Flash Solutions
LAUNCH DATE	2001

CrucialTec, a business dedicated to mobile input solutions, developed TSP (Matrix Switching-Touchscreen Panel), a new capacitive touchscreen. The company supplies products along with UI and software, and produces its MFM (Mobile Flash Module), an associated business, based on optical technology.



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cryptoV^{ision}



CUSTOMER FOCUS	Defense, Automotive, Financial, Government, Retails, Industry
KEY PRODUCTS	Smart card middleware, JAVA Card framework, PKI
LAUNCH DATE	2000

cryptovision is a specialist for cryptography and electronic identity solutions. The Germany-based company has been specializing in this field for 15 years, with hundreds of successful projects delivered. More than 100 million people worldwide make use of cryptovision products everyday in such diverse sectors as defense, automotive, financial, government, retail and more.

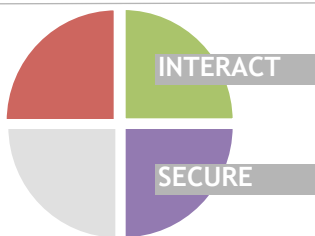
X Daon



CUSTOMER FOCUS	Government, Commercial Enterprises
GEOGRAPHIES	Australia, Europe, Africa, the Middle East, Asia, and the Americas
LAUNCH DATE	2002

As a privately held software company and biometrics industry major, Daon was founded to build biometric software products that would allow people to authenticate themselves in person or online in a secure, convenient and flexible manner, thus eliminating the threat of security breaches and device fraud.

dashlane

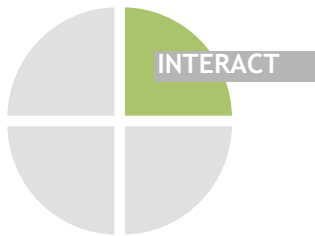


CUSTOMER FOCUS	Persons
KEY PRODUCTS	Password Manager, Automatic Filling, Digital Wallet
LAUNCH DATE	2009

Dashlane makes identity and payments simple and secure through its world-leading password manager and secure digital wallet. It is the solution for the common problem encountered by hundreds of millions of Web users worldwide — that of registering, logging in and checking out on every website and every device. Millions of people use Dashlane to manage their passwords, automatically log in, generate strong passwords, pay on any website with any card without typing, and more.

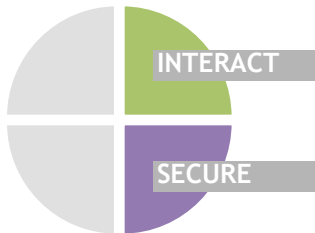


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LAUNCH DATE	1996
CUSTOMER FOCUS	Acquirers, Merchants and Financial Institutions
GEOGRAPHIES	185 Countries

Discover Network offers unique payments solutions through its open, flexible and highly secure network. They are an ever-expanding payments network that markets and supports a full range of innovative payment solutions for customers globally.



CUSTOMER FOCUS	Financial Institutions, Government Entities, Payment Companies
PRODUCTS	Authentication, Payment, Regulatory Solutions
LAUNCH DATE	1995

Early Warning provides innovative risk management solutions to a diverse network of 2,100 financial institutions, government entities and payment companies, enabling businesses and consumers to transact with security and convenience. Owned and governed by five of the largest banks in the United States, its business model facilitates a data exchange system based on collaborative intelligence and trusted exchange.



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CUSTOMERS/VOLUME	\$123 Billion
CUSTOMER FOCUS	Financial Services, Higher Education, Insurance, Automotive, Telecom & Utilities, Retail
KEY PRODUCTS	Marketing & Lead Management, Fraud Protection, Credit Risk Assessment, Collections & Recovery

eBureau provides a suite of predictive analytics and real-time information solutions to help companies acquire customers, manage risks and maintain customer relationships. Clients span across numerous industries and rely on the company’s business and consumer scoring, identity verification, authentication, location and monitoring services to make instant, data-driven decisions about consumers and businesses.



GEOGRAPHIES	150+ Countries
CUSTOMER FOCUS	Enterprise, Critical Infrastructure, Financial Institutions, Government, Law Enforcement
REVENUE	\$660 Million

Consumers, citizens and employees increasingly expect “anywhere” and “anytime” experiences — whether they are making purchases, crossing border payments or logging onto corporate networks. They also expect the ecosystems that allow this freedom and flexibility to be entirely reliable and secure. Entrust Datacard offers the trusted identity and secure transaction technologies that make these ecosystems possible.

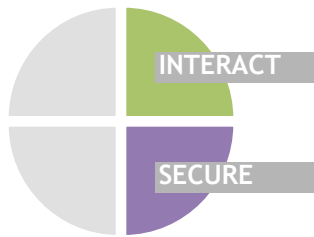


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CUSTOMERS/VOLUME	600 million customers and 81 million businesses
CUSTOMER FOCUS	Retailers, Insurance Firms, Utilities, Government, Banks, Credit Unions, other Financial Institutions
GEOGRAPHIES	19 Countries

Equifax is a global leader in consumer, commercial and workforce information solutions that provides businesses of all sizes and consumers with insight and information they can trust.



CUSTOMERS/VOLUME	Seven of the top ten eCommerce brands, seven of the top nine U.S. card issuers, two of the top five U.K. card issuers and more than 2,100 eCommerce businesses around the world
LAUNCH DATE	2005

Ethoca is a global provider of collaboration-based technology that enables card issuers, eCommerce merchants and online businesses to increase card acceptance, stop fraud, recover lost revenue and eliminate chargebacks.

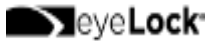


GEOGRAPHIES	80 Countries
CUSTOMER FOCUS	Automotive, Public Sector, Health, Communications, Utilities, Credit Unions, Collections
REVENUE	\$4.8 Billion

Experian is a global information services company, providing data and analytical tools to clients around the world. They help businesses to manage credit risk, prevent fraud, target marketing offers and automate decision making. Experian also helps people to check their credit report and credit score, and protect against identity theft.



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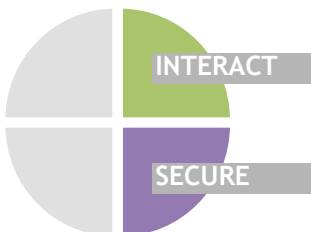
CUSTOMER FOCUS	Governments, Businesses, Consumers
GEOGRAPHIES	Europe, North America, United Arab Emirates, Latin America, Asia
PRODUCTS	Hardware and software solutions for iris identity

EyeLock Inc. is an iris-based identity management technology company that focuses on developing systems for border control, logical access, global access control, and identity management sectors. The company offers its solutions to eliminate cyber fraud, identity theft, and unauthorized access to secure environments. It serves governments, businesses, and consumers through its distributors in Europe and North America; and partners in the United Arab Emirates, Latin America, and Asia. As of September 1, 2015, EyeLock Inc. operates as a subsidiary of VOXX International Corporation.



CUSTOMER FOCUS	Device Manufacturers, Financial Institutions, Government Agencies, Health Care Services
PRODUCTS	Eyeprint ID
LAUNCH DATE	2012

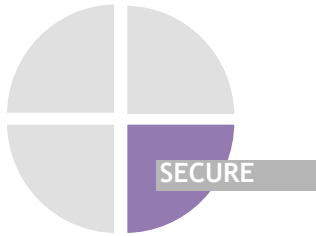
EyeVerify Inc. is the creator of Eyeprint ID, a technology which transforms a picture of your eye into a key that protects your digital life. Eyeprint ID is a highly accurate biometric technology for smart devices that delivers a password-free mobile experience with convenient, secure and private authentication. This patented solution uses the existing cameras on mobile devices to image and pattern match the blood vessels in the whites of the eye and other micro features in and around the eye.



CUSTOMER FOCUS	Banking, Payments, Insurance, and Gambling Industries, Police, Security and Local Government
KEY PRODUCTS	Face, Voice and Facial Recognition, Video Chat
LAUNCH DATE	2013

Facebanx has developed fully integrated facial recognition technology that works via webcams, mobile phones and tablets. Facebanx uses cloud-based technology to allow multiple users unlimited access worldwide either on a manual or automated basis. It is a valuable ID verification solution in the registration, single sign-on and KYC process. Facebanx aids AML and helps to minimize chargebacks.

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CUSTOMER FOCUS	Retail, Law Enforcement, Airports & Transportation, Commercial Security, Gaming
PRODUCTS	Face Recognition Platform
LAUNCH DATE	2007

FaceFirst, LLC. is a biometric face recognition software company that uses its deep domain knowledge to solve problems of vital importance to the nation and the world in law enforcement, public safety, national security and transportation. It matches individual faces from a live image with the face of an individual contained in the system's database.



CUSTOMER FOCUS	Acquirers, Issuers, Retailers, and eCommerce
GEOGRAPHIES	90 countries
LAUNCH DATE	2008

Feedzai is a data science company that uses real-time, machine-based learning to help payment providers, banks and retailers prevent fraud in omnichannel commerce. Feedzai is a global company, with U.S. headquarters in San Mateo, and is backed by SAP Ventures, big data investment firm Data Collective, and other international investors.



GEOGRAPHIES	80+ Countries
CUSTOMER FOCUS	Financial Services, Insurance, Public Sector, Pharma and Life Sciences, Education, Retail, Manufacturing, Technology, Telecommunications, Transportation and Travel
REVENUE	\$789 Million

FICO delivers superior predictive analytics that drive smarter decisions. The company's groundbreaking use of mathematics to predict consumer behavior has transformed entire industries and revolutionized the way risk is managed.



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GEOGRAPHIES	70 Countries
CUSTOMER FOCUS	Merchants, Financial Institutions, Government
CUSTOMERS/VOLUME	6.2 Million Merchant Locations

First Data is a global leader in payment technology and services solutions. With 24,000 owner-associates, the company provides secure and innovative payment technology and services to more than 6 million merchants and financial institutions around the world, from small businesses to the world's largest corporations.



LAUNCH DATE	2013
CUSTOMER FOCUS	Online Merchants
KEY PRODUCTS	Elastic Identity, Cyber Intelligence, Behavioral Analysis

Forter delivers real-time fraud prevention solutions for online merchants. Forter delivers a plug-and-play technology which allows online merchants to get a simple approve/decline answer for every transaction in real-time and delivers full merchant protection in case of a chargeback.



CUSTOMER FOCUS	Financial Services & Retail, Government, Identity & Access Security, Machine to Machine, Mobile, Transport, Training, Buy Online
GEOGRAPHIES	190 Countries
LAUNCH DATE	2006

Gemalto offers digital security solutions with 2014 annual revenues of \$2.8 billion and more than 14,000 employees operating out of 99 offices and 34 research and software development centers, located in 46 countries.

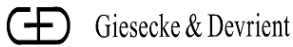


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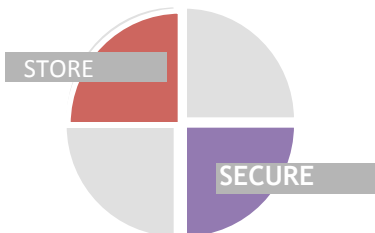
CUSTOMERS/VOLUME	100,000 Customers
CUSTOMER FOCUS	Retail, ISP and Web Host, Education, Financial Services, Health Care, Government, Developer
GEOGRAPHIES	150 Countries

A wholly owned subsidiary of Symantec, Corp., GeoTrust is a low-cost digital certificate provider. GeoTrust's range of digital certificate and trust products enable organizations of all sizes to maximize the security of their digital transactions cost-effectively.



GEOGRAPHIES	32 Countries Across Every Continent
KEY PRODUCTS	Driver's license; electronic EU resident permits; electronic payment; electronic vehicle registration cards; health care cards; national ID cards; passports; payment cards; SIM cards and OTA; strong authentication

Giesecke & Devrient is a global technology provider with its headquarters in Munich, Germany, and 58 subsidiaries, joint ventures, and associated companies in 32 countries across every continent.



KEY PRODUCTS	Web, Mobile, Business, Media, Geo, Specialized Search, Home & Office, Social
REVENUE	\$66 Billion
LAUNCH DATE	1998

Google is a global technology leader focused on improving the ways people connect with information. Google's innovations in Web search and advertising have made its website a top Internet property and its brand one of the most recognized in the world.

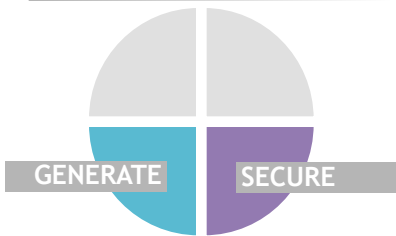


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CUSTOMER FOCUS	Financial, Military, Consumer, Enterprise, and Government
GEOGRAPHIES	10 Countries
LAUNCH DATE	2007

GO-Trust Technology Inc. was the innovator of the secure microSDs and the first company to deliver hardware security for mobile devices using the SD and microSD form factor. Its vision is to provide the most robust, service provider independent, privacy and security solutions for all open architecture mobile devices.



CUSTOMER FOCUS	Banking & Financial, Education, Enterprise & Corporate, Government, Health Care
GEOGRAPHIES	100 countries
PRODUCTS	Access Control, Asset Tracking, Border Protection, Embedded Solutions, Identity Management, Secure Transactions

HID Global is focused on creating customer value and is the supplier of choice for OEMs, integrators, and developers serving a variety of markets that include physical access control; IT security, including strong authentication/credential management; card personalization; visitor management; government ID; and identification technologies for technologies for a range of apps.



CUSTOMER FOCUS	IT, Legal & Compliance, Marketing
KEY PRODUCTS	Information Analytics, Unified Information Access, Information Archiving, eDiscovery, Enterprise Content Management, Data Protection, Marketing Optimization,

HP Autonomy processes human information, or unstructured data, including social media, email, video, audio, text and webpages. Autonomy's management and analytic tools for structured information, together with its ability to extract meaning in real-time from all forms of information, is unique for companies seeking to get the most out of their data.



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CUSTOMER FOCUS	All (Software Developers, Enterprises, Device Manufacturers)
KEY PRODUCTS	Biometric Security SDK, Key Password Manager, Token
LAUNCH DATE	2014

HYPR is a sector agnostic platform enabling secure biometric authentication. From software developers to enterprises and device manufacturers, the company aims to replace the use of passwords with a unified biometric identity protocol. As an end-to-end solution, HYPR is the fundamental framework for securing the Internet of Things.



KEY 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

IdentityMind’s risk management platform builds reputations used in evaluating anti-fraud, merchant account applications, consumer account origination, identity verification services, anti-money laundering, and more. These reputations are shared during analysis, so everyone can benefit from the “network effect” while protecting the privacy of the entities.



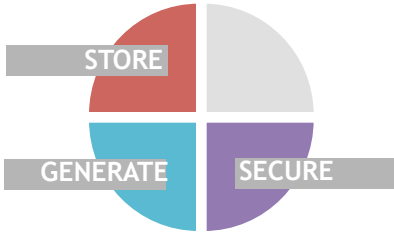
CUSTOMER FOCUS	Global Government, Education, Retail, Transportation, Health Care
KEY PRODUCTS	Digital Certificates, Trusted Authentication, Mobility, and Cloud Services
LAUNCH DATE	2007

Identiv establishes trust in the connected world, including premises, information, and everyday items. CIOs, CSOs, and product departments rely upon Identiv’s trust solutions to reduce risk, achieve compliance, and protect brand identity.



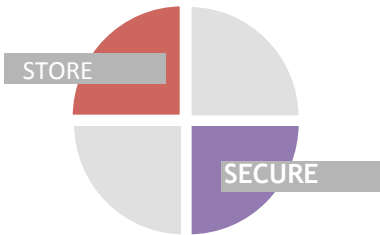
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IdenTrust



KEY PRODUCTS	Identity Solutions, Authentication, Encryption, Digital Signing
CUSTOMER FOCUS	Banks, Corporates, Government
GEOGRAPHIES	175 Countries

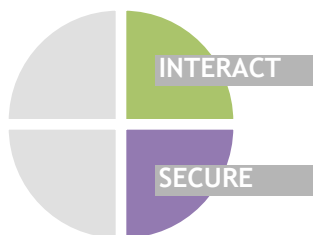
IdenTrust provides a legally and technologically interoperable environment for authenticating and using identities. IdenTrust enables end-users to have a single identity that can be used with any bank, any application, and across any network.



CUSTOMERS/VOLUME	40 installed locations, 35,000 desktop licenses, and repeat Fortune 100 clients
CUSTOMER FOCUS	Medium to Large Contact Centers
LAUNCH DATE	1996

IntraNext provides products and services to the call center industry. The company focuses on helping clients run efficient contact centers for better customer service capabilities.

JUMIO[®]



CUSTOMER FOCUS	Finance, Retail, Travel, Sharing Economy, Gaming, Telecommunications
GEOGRAPHIES	120 Countries
LAUNCH DATE	2012

Jumio is a credentials management company that utilizes proprietary computer vision technology to authenticate customer ID credentials in real-time Web & mobile transactions to reduce mobile checkout friction.



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lenovo



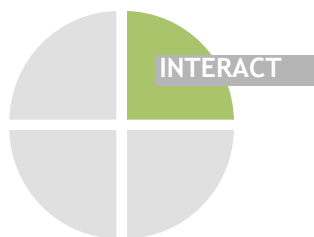
CUSTOMER FOCUS	Small Business Store, Large Enterprise, Government, Education, Students, Business Partners, Military
GEOGRAPHIES	160+ Countries
LAUNCH DATE	1984

Lenovo is a \$34 billion personal technology company and the world's largest PC vendor and a global Fortune 500 company. Lenovo has been the fastest growing major PC company for more than four years and creates a full range of personal technology products, including smartphones, tablets and smart TVs.



LAUNCH DATE	2012
GEOGRAPHIES	80 Countries

LiveEnsure® is the interactive authentication innovation company. LiveEnsure® authenticates user security context via their smart devices as they access a site, cloud or app with scan-to-screen, app-to-app, or screen-to-tap engagement.



CUSTOMER FOCUS	Retail, Finance, Government, Health Care
LAUNCH DATE	1972
KEY PRODUCTS	Secure Card Reader Authenticators, Card Personalization and Issuance, PIN Issuance and Management, Small Document Scanners, Protection Services

MagTek is a manufacturer of electronic systems for the reliable issuance, reading, transmission and security of cards, checks, PINs and identification documents. Its products include secure card reader/authenticators, encrypting check scanners, PIN pads and distributed credential personalization systems.



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CUSTOMER FOCUS	Consumers, Merchants, Business Partners, Governments
GEOGRAPHIES	Asia Pacific, Middle East and Africa, Europe, Latin America & Caribbean, and North America; 210 Countries
REVENUE	\$9.5 Billion

MasterCard operates a payments processing network, connecting consumers, financial institutions, merchants, governments and businesses. MasterCard’s products and solutions make everyday commerce activities – such as shopping, traveling, running a business and managing finances – easier, more secure and more efficient for everyone.



REVENUE	\$86.8 Billion
CUSTOMER FOCUS	Communications and Media, Financial Services, Manufacturing and Resources, Retails Consumer Products and Services
GEOGRAPHIES	190 Countries

Founded in 1975, Microsoft is a worldwide leader in software, services, devices and solutions that help people and businesses realize their full potential.

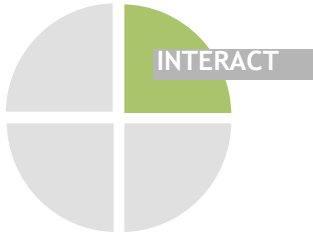


CUSTOMER FOCUS	Government Identity, Public Security, Critical Infrastructure, Transportation and Business Markets
PRODUCTS	Civil Identity (ID), Public & Border Security (Check ID), Digital ID and Smart Transactions, Biometric Terminals
LAUNCH DATE	2005

Morpho employs more than 8,600 people in 55 countries. Morpho is one of the leading suppliers of SIM cards, smart cards, trace detection equipment and gaming terminals. With integrated systems operating in more than 100 countries, Morpho’s solutions simplify and secure the lives of people around the world.



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CUSTOMER FOCUS	Device Manufacturers, Mobile Networks Operators, Identity Service Providers, Security Vendors
KEY PRODUCTS	Multifactor Authentication Client Desktop & Client Edition, Server
LAUNCH DATE	2011

Based in Palo Alto, California, the company was founded in November 2011 to unify the silos that plague current online authentication technologies. Nok Nok Labs' ambition is to fundamentally transform online authentication by enabling end-to-end trust across the Web in a manner that is natural to end-users while providing strong security and proof of identity.



CUSTOMERS/VOLUME	Fortune 100 Companies
KEY PRODUCTS	Early Fraud Detection, Behavior Piercing, Behavioral Analytics, Web Fraud, Advanced Threat Detection
LAUNCH DATE	2008

NuData Security, Inc. provides advanced Web security solutions to enterprises through proprietary behavior analytics and countermeasures. NuDetect examines users in real-time through context aware measures including behavior signatures unique to a customer's business and those common across the NuData security cloud.

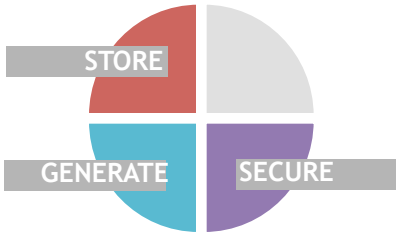


CUSTOMER FOCUS	Access Management, Aerospace and Defense, Automatic Fare Collection, Automotive, Computing, Consumer, Cybersecurity, eGovernment, Health Care, Industrial, Lighting, Portable Devices
LAUNCH DATE	2006

NXP Semiconductors has its expertise in high-performance mixed signal electronics and is driving innovation in the areas of connected car, security, portable and wearable, and the Internet of Things.

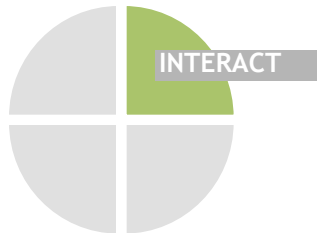


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CUSTOMERS/VOLUME	2,000 Financial Institutions
CUSTOMER FOCUS	Financial Institutions, Mobile Network Operators, Government and Corporate Entities, Transportation Authorities, Retailers, Internet of Things Providers
GEOGRAPHIES	140 Countries

OT specializes in digital security solutions in the mobility space. Present in the payments, telecommunications and identity markets, Oberthur offers end-to-end solutions in the smart transactions, mobile financial services, machine-to-machine, digital identity and transport & access control fields. OT's international network serves clients in 140 countries.



LAUNCH DATE	1990
CUSTOMER FOCUS	Banks, MNOs, Vending & Unattended, Mass Transit, Petroleum, Parking
GEOGRAPHIES	55 Countries

On Track Innovations Ltd. (oti) is a leader in contactless and near field communications (NFC) applications based on its extensive patent and IP portfolio. Oti markets and supports its solutions through a global network of regional offices and alliances.



CUSTOMER FOCUS	Nonprofits, Education, Political Campaigns, Government, Enterprise
GEOGRAPHIES	203 Countries
CUSTOMERS/VOLUME	165 million active customer accounts

PayPal gives people better ways to send money without sharing their personal financial information and with the flexibility to pay using their PayPal account balances, bank accounts, PayPal Credit and credit cards.



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CUSTOMER FOCUS	Mobile, Automotive, Education, Health Care, Internet of Everything, Networking, Smart Home
KEY PRODUCTS	Digital Communications Products and Services
LAUNCH DATE	1985

QUALCOMM, Inc. manufactures digital wireless communications equipment. The company licenses its code division multiple access (CDMA) and orthogonal frequency division multiplexing access intellectual property to other companies, and produces CDMA-based integrated circuits, and produces equipment and software used to track workers and assets, and software for wireless content enablement.



REVENUE	\$6 Billion
CUSTOMER FOCUS	Communications, Media and Entertainment Solutions, Energy Solutions, Health Care and Life Sciences Solutions, Public Sector

RSA is the security division of EMC. The security partner of more than 90 percent of the Fortune 500, they help the world's leading organizations with security concerns.



CUSTOMER FOCUS	Electronic Equipment, Consumer Electronics
GEOGRAPHIES	90 Countries
LAUNCH DATE	1938

For over 70 years, Samsung has led the global market in high-tech electronics manufacturing and digital media.

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CUSTOMER FOCUS	Persons and business
KEY PRODUCTS	Storage (Hard Drive), Backup & Recovery Services (Cloud, Hybrid Cloud)
LAUNCH DATE	1997

Seagate is a global data storage solutions provider, developing products that enable people and businesses around the world to create, share, and preserve their most critical memories and business data. Over the years the amount of stored information has grown, confirming the need to successfully store and access huge amounts of data. As demand for storage technology grows, the need for greater efficiency and more advanced capabilities continues to evolve.



CUSTOMER FOCUS	Banking & Financial Services, Government, Payments, and Telecoms & Utilities
GEOGRAPHIES	briidge.net Connect, briidge.net Exchange
LAUNCH DATE	2008

SecureKey is the identity and authentication provider for organizations that deliver online consumer services. SecureKey eliminates the need to store passwords by securely linking consumer ID to trusted devices, while providing consumers with the choice, control and convenience over how they access the services they want. SecureKey delivers a high-performance, easy-to-use, strong dynamic authentication platform that reduces the burden, cost, and risks associated with authenticating millions of consumers while also improving the user experience.

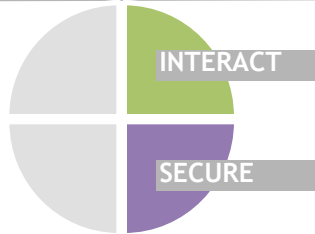


CUSTOMER FOCUS	Financial, Commercial, Federal, Medical
LAUNCH DATE	2000

SecurityMetrics is a leading provider and innovator in data security and compliance for organizations worldwide. The company's mission is to help organizations comply with financial, government, and health care mandates through innovative security tools, caring customer support, and qualified expertise.



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LAUNCH DATE	2012
CUSTOMER FOCUS	Mobile Login & Payments
KEY PRODUCTS	Branded Mobile Payments, Frictionless Payments, FonePrint Technology

SEKUR Me, Inc. eliminates online payment friction for eCommerce and mCommerce sites. Its patented technology combines single-click convenience with multi-factor authentication, providing a high level of security with an unmatched level of convenience by eliminating user IDs and passwords for safer logins.



CUSTOMER FOCUS	Travel, Digital Cash, On-Demand, Online Marketplace, eCommerce, Payment Gateway
PRODUCTS	Machine Learning, Device Fingerprinting
LAUNCH DATE	2011

Using large-scale machine learning technology to predict fraudulent behavior with unparalleled accuracy, Sift Science leverages a global network of fraud data. Our flexible, adaptive, and automated solution helps businesses of all sizes detect and prevent fraud.



CUSTOMER FOCUS	Technology (mobile, tablet, Notebook PC), Automobiles, Wearables
GEOGRAPHIES	China, South Korea, Taiwan, the United States, Japan, and other countries.
LAUNCH DATE	1986

Pioneers and leaders of the human interface revolution, bringing innovative and intuitive user experiences to intelligent devices. From usability and R&D to supply chain and support, Synaptics collaborates with its partners to invent, build and deliver human interface solutions that integrate seamlessly and optimize system value.

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tascent



CUSTOMER FOCUS	Borders and Identity, Law Enforcement and Public Safety, Defense and Humanitarian Aid, Healthcare and Personal Data
PRODUCTS	High Throughput Iris Recognition, Mobile Identity
LAUNCH DATE	2015

Tascent develops and deploys biometric identity products and solutions that excel in challenging real-world environments. Tascent has expertise in iris recognition and multimodal high-throughput and mobile biometrics stemming from its acquisition of AOptix Technologies' Identity Solutions business unit.

TeleSign



PRODUCTS	Verification APIs, Mobile SDKs, Data and Analytics APIs
LAUNCH DATE	2005

TeleSign provides Mobile Identity solutions, helping customers secure and prevent registration fraud, while improving user experience and managing support costs. TeleSign delivers account security and fraud prevention with two-factor authentication based on each user's Mobile Identity (phone number, device and behavior) and driven by real-time, global intelligence, including reputation scoring and device data.

ThreatMetrix

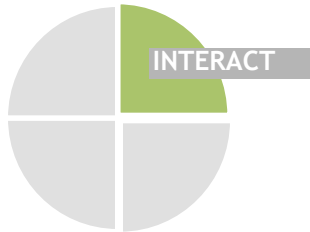


CUSTOMER FOCUS	eCommerce, Financial Institutions and FFIEC, Enterprise, Insurance, Social Networks, Government, Health Care
KEY PRODUCTS	Advanced Fraud Protection, Content-Based Authentication
LAUNCH DATE	2005

ThreatMetrix builds trust on the Internet by offering market-leading advanced fraud prevention and frictionless context-based security solutions. These solutions authenticate consumer and workforce access to mission critical applications using real-time identity and access analytics that leverage the world's largest trusted identity network.



PLAYER DIRECTORY | ALL PLAYERS ARE LISTED IN ALPHABETICAL ORDER



PRODUCTS	Payments, Financial, Telecommunications
GEOGRAPHY	60 countries
LAUNCH DATE	1990

Transaction Network Services (TNS) has been delivering solutions for the payments, financial and telecom industries since 1990. TNS is the preferred supplier of networking, integrated data and voice services to many leading organizations in the global payments and financial communities, as well as a provider of extensive telecommunications network solutions to service providers. TNS Secure Payment Networks, is a PCI certified network designed to securely and quickly deliver critical payment transaction information to banks, merchants, processors and other payment institutions.



CUSTOMER FOCUS	Financial, Health Care, Insurance, Not-for-profit, Retail, University/College
PRODUCTS	Batch Tokenization, Data Vaulting, Virtual Terminal Proxy, Web Services, Recurring Payments
LAUNCH DATE	2010

TokenEx is an enterprise-class data security platform that offers flexibility in how customers can access, store and secure data. TokenEx extends flexibility by working with multiple data acceptance channels and by maintaining a processor-agnostic approach. TokenEx can tokenize and secure multiple data types including payment card data, financial account numbers, HIPAA records, and even unstructured data formats.



CUSTOMER FOCUS	Education, Payment Services, Health Care, Restaurants, Financial Services, Hotels, Public Sector, Retail
GEOGRAPHIES	96 Countries
LAUNCH DATE	1995

Trustwave helps businesses fight cybercrime, protect data and reduce security risk. With cloud and managed security services, integrated technologies and a team of security experts, ethical hackers and researchers, it enable businesses to transform the way they manage their information security and compliance programs.

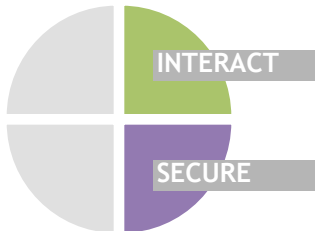


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CUSTOMER FOCUS	Financial, Enterprise, E-commerce, Government, Healthcare
GEOGRAPHIES	100 Countries
LAUNCH DATE	1991

VASCO proves two-factor authentication and digital signature solutions to financial institutions. VASCO secures access to data and applications in the cloud, and provides tools for application developers to easily integrate security functions into their Web-based and mobile applications.



KEY PRODUCTS	CDRN, Chargeback Representation Services, Intelligence Suite, Decline Salvage, Global Payment Gateway, CAMS
LAUNCH DATE	2005

Since 2005, Verifi has been a leading provider of global electronic payment and risk management solutions for card-not-present merchants. The highly customizable payment and real-time reporting platform serves as a foundation for Verifi's suite of fraud solutions and risk management strategies.

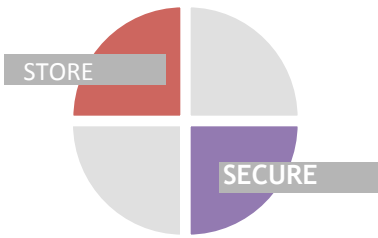


CUSTOMER FOCUS	Personal, Small Business, Medium and Large Organizations, Merchants, Government
GEOGRAPHIES	200 Countries
LAUNCH DATE	1958

Visa Inc. (NYSE:V) is a global payments technology company that connects consumers, businesses, financial institutions, and governments in more than 200 countries and territories to fast, secure and reliable electronic payments.



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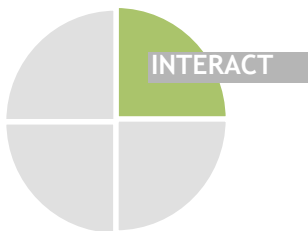
CUSTOMER FOCUS	Enterprise, Consumer
KEY PRODUCTS	Secure Storage, Mobile Application IPS, Adaptive Token, Secure Mobile Websites, Mobile Threat Intelligence
LAUNCH DATE	2011

V-Key focuses on cutting-edge mobile phone security research and development, studying the latest advanced attacks against mobile phones and inventing solutions to defend against them.



CUSTOMER FOCUS	Financial Services, eCommerce & Retail, Communication Services Providers, Marketing Service Providers
PRODUCTS	Phone Solutions, Identity Solutions
LAUNCH DATE	1997

Whitepages Pro was founded to deliver the most up-to-date identity insights to businesses of all kinds, along with powerful analytics and tools to maximize the power of that information. Products and pricing support businesses of all sizes, from local retailers to the Fortune 50.



CUSTOMER FOCUS	Individuals, Business, Developers
PRODUCTS	YubiKeys, YubiHSM, Services & Software
LAUNCH DATE	2007

Yubico was founded in 2007 with a prototype of its YubiKey invention and the mission to make secure online identities truly ubiquitous. Yubico's vision is to enable Internet users to have one single and secure key for securing access from any device to any number of services.

ABOUT THE IDENTITY TRACKER™

The PYMNTS.com Identity Tracker™, powered by Oberthur, is designed to be a forum for framing and addressing key issues and trends facing the entities charged with efficiently and securely identifying and granting permission to individuals to access, purchase, transact, or otherwise confirm their identity. The Identity Tracker™ also provides an organizing framework for identifying the many companies that offer key services needed to securely generate, store, transact and authorize or authenticate users in an identity ecosystem.

If you would like to be included in this report and/or would like your information to be updated, please contact us at identitytracker@pymnts.com and we will send you the data sheet required for submission.

ABOUT OBERTHUR TECHNOLOGIES

Oberthur Technologies (OT) is a world leader in digital security solutions for the mobility space. OT has always been at the heart of mobility, from the first smart cards to the latest contactless payment technologies which equip millions of smartphones. Present in the Payment, Telecommunications and Identity markets, OT offers end-to-end solutions in the Smart Transactions, Mobile Financial Services, Machine-to-Machine, Digital Identity and Transport & Access Control fields. OT employs over 6,000 employees worldwide, including close to 700 R&D people. With more than 50 sales offices across 5 continents and 1 manufacturing hub by region, OT's international network serves clients in 140 countries. For more information, visit www.oberthur.com.

ABOUT PYMNTS.COM

PYMNTS.com is reinventing the way in which companies in payments share relevant information about the initiatives that shape the future of payments and commerce and make news. This powerful B2B platform is the No. 1 site for the payments and broader commerce ecosystem by traffic and the premier source of information about “what’s next” in payments. C-suite and VP level executives turn to it daily for these insights, making the PYMNTS.com audience the most valuable in the industry. It provides an interactive platform for companies to demonstrate thought leadership, popularize products and, most importantly, capture the mindshare of global decision-makers. PYMNTS.com ... where the best minds and best content meet on the Web to learn “what’s next” in payments and commerce.



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