# BANKINGTRACKER™

# HOW HSBC **USES AI TO BOOST** ITS DIGITAL BANKING IMMUNE SYSTEM

# feedzai

#### FEATURE STORY

HSBC's head of innovation on why the human touch makes AI more effective

**NEWS & TRENDS** Reserve Bank of India reports a 50 percent increase in cyber fraud

#### SCORECARD

The top movers and shakers in the digital banking space

JANUARY 2019

# **DIGITAL BANKING**TRACKER™

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Jeremy Balkin, head of innovation for HSBC, explains how the bank combines AI and ML solutions with human insights to crack down on fraudulent activity



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#### ACKNOWLEDGEMENT

The Digital Banking Tracker<sup>™</sup> is done in collaboration with Feedzai, and PYMNTS is grateful for the company's support and insight. <u>PYMNTS.com</u> retains full editorial control over the report's methodology and content.

feedzai

# What's Inside

Banks and financial institutions (FIs) have been locked in an ongoing fight against fraudsters as they seek to keep their customers and operations safe. Bad actors are becoming more brazen in their efforts, though, and many financial services organizations are realizing they need a deeper understanding of fraud — right down to its genetics.

The first step in understanding fraud is realizing just how complex it is. The ecosystem surrounding it includes computer services, connected devices, payment cards, personal data, locations and more. These components come together to form a broader system that regularly utilizes stolen personal data to perpetuate a range of illegal activities, including account takeovers and identity thefts.

FIs are increasingly embracing artificial intelligence (AI) and machine learning (ML) technologies, which allow them to quickly scan transactions for suspicious activities and raise flags when behaviors start to change. These tools must be used to map the fraud ecosystem and dismantle it. Human beings, too, will play an important role in determining the best ways to prevent fraud, rather than just reacting to it.

The recently released <u>Feedzai Genome</u>, which is powered by AI, maps the fraud ecosystem to wage a more effective fight against cybercriminals. The project's method for decoding fraud resembles how DNA sequences are mapped, and it finds connections in illegal activities and money laundering. Doing so allows it to map relationships and patterns that might otherwise be impossible to connect. The solution can effectively visualize connections between different data sources – such as transactions, identities and locations – and compare them with other types, including know-yourcustomer (KYC), third-party provider (TPP) and dark web sources. The Genome will continuously learn about fraudulent patterns and automatically detect new and emerging ones, including layering activities, account takeovers, bot attacks and more.

Of course, Feedzai is not the only firm attempting to rid the financial services sector of bad actors.



#### News from the digital banking space

The Genome aside, Feedzai has a new partner in its fight against fraud — it recently <u>announced</u> it will work with Citi's Treasury and Trade Solutions. The two companies will collaborate on integrating a transaction monitoring platform into Feedzai's services and solutions. The offering uses ML to automatically respond to changes in customers' behaviors and highlight potential problems with payments before they are cleared.

A group of banks in the United Arab Emirates <u>banded</u> together to crack down on check-related fraud. The 52-member UAE Banks Federation's plan to combat counterfeit check activities includes enhanced encryption technology and unique QR codes on every newly issued check.

It's not just banks that are partnering to fight fraud. A group of U.K. telecommunications firms are joining forces to stem a rising tide of authorized push payments (APP) fraud — an illegal practice in which scammers pose as officials to convince consumers to send them money. A recent report found SMS-based APP scams cost U.K. consumers approximately £145 million (\$190 million) in the first half of 2018. The firms have launched SMS Phishguard to make consumers more aware of the scams, reduce the number of incidents and encourage the public to report such activities.

# Deep Dive: Banks need to understand fraud to fight it

Alerting the public to fraud is only one part of combatting it. FIs must also learn more about how to fight effectively. Banks are often put in a position where they must try to fight bad actors without harming trustworthy customers' experiences. These institutions need to clearly understand fraud, right down to its DNA, to effectively battle against it. This month's Digital Banking Tracker<sup>™</sup> includes a Deep Dive (p. 15) on how banks can use a genetic mapping model as a fraud-fighting strategy.

# HSBC blends AI, ML solutions with human insights to combat fraud

Many banks and other FIs are turning to AI and ML solutions to crack down on fraudsters. But using such tools to detect fraud is just one part of an effective strategy, said Jeremy Balkin, head of innovation at <u>HSBC</u>. In this Tracker's Feature Story (p. 6), Balkin explains how HSBC's core system combines AI and ML with human insights to respond to potential problems, mimicking the way that the immune system responds to health risks.

#### January Digital Banking Tracker<sup>™</sup> updates

This edition of the Tracker features profiles of more than 260 players in our ever-expanding provider directory, including three additions: Eyowo, Nubank and Yandex.Money.

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#### WHAT'S INSIDE

# **FIVE FAST FACTS**

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57%

Share of Malaysians who use online banking resources to make recurring payments 82%

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Portion of U.K. executives who said their FIs are falling behind challenger banks Share of SMBs that are less likely to use digital banking channels and still consider themselves "branch dependent"

**61**%

67%

Share of millennials with smartphones who use mobile banking 65%

.........

....

Portion of Amazon Prime members who would be open to trying an online bank account offered by Amazon with 2 percent cash back

# HOW HSBC USES AI TO BOOST ITS DIGITAL BANKING IMMUNE SYSTEM

# Feature Story

"Technology like AI can deliver a superior customer experience and a safer customer experience by putting the power literally in the palm of customers' hands."

**JEREMY BALKIN,** head of innovation at <u>HSBC</u>

Banks must have constant insight into potentially suspicious activities to stay ahead of fraudsters. Many FIs are achieving this state of vigilance by investing in AI and ML solutions as part of their antifraud efforts.

These solutions can be implemented to review expansive volumes of bank transactions and data points to help banks detect questionable activities and broader patterns of potential fraud. But as Jeremy Balkin, head of innovation for Swiss bank <u>HSBC</u>, recently told PYMNTS, even AI and ML need assistance sometimes — from humans.

Balkin explained how AI and ML solutions are taking the fight against fraud to every level of a bank from the risk analysis experts on the FI's end to tellers on the front end — and how these solutions are made more effective when humans confirm and clarify the returned insights. "When you find actionable insights, how do you act on them?" Balkin said. "The effectiveness of the technology is limited if you can't act upon the actionable insights that the technology articulates for you."

### Searching for a financial fraud needle in a haystack

While AI and ML solutions are providing banks with valuable help in reviewing data to detect suspicious activities, FIs still need to be able to quickly react to the insights. HSBC recently invested in a new core banking system that readily responds to AIdriven discoveries. The goal is to make the bank's core system responsive to the actions that the AI solution recommends. Balkin compared this internal communication between different bank systems to the human body's immune system and how it immediately responds to a problem. "[Having] this connectivity for these various technologies [is like having] all the organs of a body talking to each other with an immune system that understands what is going on," he said.

Many banks, HSBC included, are also using AI to stay compliant with new regulations and anti-money laundering (AML) rules. This means FIs must review large quantities of data across their networks to ensure that those using their banking systems are trustworthy and in line with financial regulations. As such, AI and ML tools have quickly become crucial to determining if suspicious activity is being perpetuated, sparing employees from manually reviewing troves of data.

"You have billions and, in some cases, trillions of transactions across global networks," Balkin said. "Finding a needle in a haystack, as it were, is done most effectively using the power of AI to look through massive data sets."

In other words, AI and ML solutions could provide banks with the tools they need to rapidly protect and heal themselves from potential threats.

#### Pairing humans and AI against fraud

Despite Al's potential, Balkin said humans are still very much necessary to keep financial systems safe from fraudsters. People have several roles to play to make AI effective at all levels of an FI, including on the bank end, where they can improve solutions' performances by confirming if transactions are falsepositives or false-negatives.

# UNDER THE HOOD

# How have AI and ML tools challenged banks' perceptions of fraud?

"In the old days, you had humans looking at spreadsheets, which worked when the [scale of transactions] was smaller. When the data sets are so large, you clearly need technology to help you do that effectively. [Humans have the capability to work with AI] and determine if [something] is a false-positive or a false-negative. To add that human capability on top of what technology can do gives [FIs] what we call 'superhuman capabilities.' In this hypervigilant financial services environment, financial crime compliance, AML, KYC rules and fraud are such important issues, and rightly so. I think, for the first time in history in banking, these issues are really front of mind for every bank leader - as they should be. Clearly, AI is, in its truest sense, [what banks] need in their toolkits to tackle these issues effectively as an industry."

**JEREMY BALKIN,** head of innovation at HSBC

#### FEATURE STORY

Al-generated fraud alerts that go directly to customers' smartphones also put them on the front lines of helping their banks fight fraud.

"The best person to determine whether there was a [fraudulent activity], for example, on a credit card, is the customer," he said. "Technology like AI can deliver



a superior customer experience and a safer customer experience by putting the power literally in the palm of customers' hands."

Al-powered fraud alerts can also encourage customers to interact with the systems, demonstrating how the technology is beneficial.

"All of these technologies can be very much in the abstract, [leaving customers to wonder,] 'What does this mean when the rubber hits the road?"" Balkin said. "It's important to recognize the link between the two and how the abstract actually has a tangible, positive impact."

As customers engage with Al-based alerts and help the technologies make more informed and insightful decisions, customers are becoming more aware of how such solutions are benefiting their daily lives. This connection between Al systems and human beings can give banks the tools they need to keep their networks immune from fraudulent activities.

# **News & Trends**



#### Fraud-fighting partnerships

# Citi, Feedzai partner to combat cybercrime with AI

Financial services firm Citi is realizing that it pays to have help in the fight against fraud. Citi's Treasury and Trade Solutions recently <u>partnered</u> with AI and fraud solution provider Feedzai on an effort to keep cybercriminals at bay. The two companies will be working together on a transaction monitoring platform that utilizes Feedzai's ML technology, which will be integrated into Citi's services and solutions. According to a press release, the companies' goal is to improve risk management and offer clients greater control over their payment transactions.

Feedzai's ML solution automatically responds to changes in customers' payment patterns and helps identify potential problems before transactions are cleared. The partnership will enable Citi to quickly scale solutions and help its consumers make secure, frictionless payments in markets around the globe. The new solution is expected to roll out later this year. This isn't the first time Citi has partnered with Feedzai – Citi Ventures made a strategic investment in the company in 2016.

# Spring Labs joins with 16 FinTechs on fraud prevention platform

Identity solutions provider Spring Labs is also forming fraud-fighting partnerships. The company recently <u>announced</u> that it is working with 16

different FinTechs to help FIs more securely and effectively share data. The FinTechs - SoFi, OnDeck Capital, Avant, GreenSky, Funding Circle, BlueVine, Fundation, Upgrade, Fundbox and Better Mortgage and others – will join the Spring Founding Industry Partners (SFIP) program, a collection of FIs and financial services partners that are working with Spring Labs to develop its Spring Protocol network. The network, which aims to transform how information and data are shared globally, enables participants to offer information without compromising underlying data by utilizing advanced cryptography and blockchain. SFIP's participants will work together on research, development and implementation before the Spring Protocol's public launch.

#### YES BANK wraps up 100-day Datathon

Major Indian firm YES BANK recently brought different players together to find new banking solutions. Many FIs are turning to AI and ML to automate a range of tasks, including data entry, cash deposits, salary uploads and more. More advanced AI and ML solutions can even sell products or process loans.

To foster innovation in these areas, YES BANK <u>created</u> the YES Datathon, at which more than 6,000 data scientists, engineers and developers from across India and Sri Lanka aimed to identify 20 new banking solutions that would be implemented in the month after the event. The 100-day, corporate-state event wrapped up last month, and proof of concept solutions that resulted from the Datathon included one offering a 360-degree view of every retail customer and customized product recommendations, an AI-based offering for relationship managers and an ML algorithm to highlight customer relationships.

#### UAE banks aim to combat check fraud

A group of Middle East banks has banded together to fight check-related fraud. The 52-member UAE Banks Federation (UBF) recently <u>unveiled</u> plans to crack down on counterfeit checks by improving security and verification processes with new solutions like enhanced encryption technology and unique QR codes that are printed on newly issued checkbooks. The solutions will detect potential issues in real time and help banks shield themselves and their customers from the potential effects of checkrelated fraud. According to Abdul Aziz Al Ghurair, the UBF's chairman, these efforts will enhance the UAE's financial security. The UBF hopes the initiatives will also drive further innovations within the UAE's banking sector.

#### New fraud-catching tools

### Feedzai launches Risk Ledger for fraud prevention

Feedzai is also pursuing its own fraud-fighting efforts with the <u>launch</u> of Risk Ledger, which provides users with federated data and insights from the company's customer base and third-party vendors. The ledger acts as an "integrated data consortium" to provide users with more comprehensive and accurate fraud detection tools that reduce the rate of false-positives. A news release announcing Risk Ledger's launch noted that the solution can stop repeat fraudsters for up to five months longer than



traditional detection methods. It uses profiles with pseudonymized and pre-aggregated personal data, which prevents participants from sharing or revealing sensitive information. The ledger also maintains a knowledge graph and global segment-of-one profiles that include approximately 150 billion data points for a single bank.

#### Mogo expands upon Plaid integration

While Feedzai focuses on the launch of new technologies, Canadian challenger bank Mogo Finance Technology is building upon an existing technological partnership to improve its customers' financial lives. The FinTech firm recently <u>announced</u> that it will be expanding its effort with customer experience solution provider Plaid. Mogo will now use the latter's application programming interface (API) to provide more efficient access to its product lineup. The goal is to help Mogo's roughly 750,000 customers exercise greater control over their financial lives.

Mogo offers consumers several products, including a free MogoAccount, free credit monitoring, identity and fraud protection, a digital checking account with a Visa prepaid card and digital mortgage tools. The company also offers MogoCrypto as part of its MogoWealth products, which allow for the sale and purchase of bitcoin.

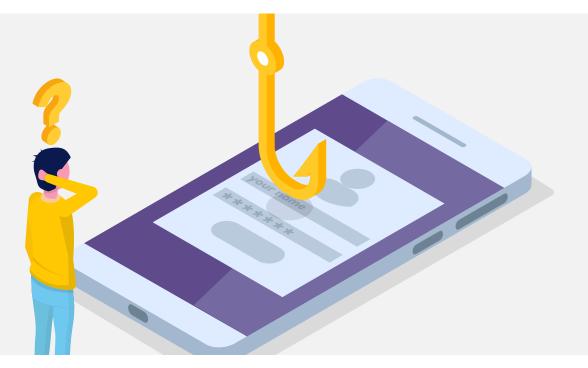
#### BioCatch embarks on an anti-vishing expedition

BioCatch, a behavioral biometric solutions provider, has launched its own platform to keep fraudsters in check. The company recently <u>debuted</u> an offering that helps consumers stay vigilant against vishing, a form of APP fraud. Fraudsters engaging in these schemes will pose as banks, police officers or other officials or authorities in an attempt to deceive consumers into transferring funds. Vishing is becoming increasingly problematic in the U.K. — approximately 4,000 bank customers lost an average of £9,000 (\$11,700) each to vishing scams in the first half of 2018.

BioCatch's solution detects if potential victims are unwittingly falling into vishing traps by analyzing users' online interactions in real time to gather behavioral insights. These include indicators that detect when they might be conducting a transaction under the influence of a cybercriminal.

#### U.K. networks join forces to fight APP fraud

A quartet of U.K. telecommunications networks are also taking up the fight against APP activities. EE, O2, Three and Vodafone have joined forces to launch an <u>initiative</u> to curb text-based scams. The initiative, SMS Phishguard, was released after a report found that text-based APP scams cost U.K. consumers roughly £236 million (\$307 million) in 2017 and another £145 million (\$190 million) in the first half of 2018. SMS Phishguard was released last year at SMS World 2018 to raise awareness surrounding phishing scams, reduce the rate of attacks and help consumers report these activities. Part of the initiative involves the creation of an SMS SenderID Protection Registry, which will enable banks and other customer-facing organizations to register to protect



the message headers they use when communicating with customers via SMS. Businesses and customers will thus be able to distinguish between official and fraudulent text messages.

#### India's fraud surge

#### **RBI: Bank fraud surges in India**

Fraudulent activity is also rising in India. A recent report by the Reserve Bank of India (RBI) found fraudsters managed to make off with Rs41,167 crore (\$5.8 billion) during the 2017 – 2018 financial year, reflecting a 72 percent rise in fraudulent activity from the previous fiscal period. The report also noted that the high rate of fraud was partly due to a large-value case in which businessman Nirav Modi and his uncle. Mehul Choksi, defrauded Punjab National Bank of approximately \$2 billion. According to the report, larger fraud cases like that one are more likely to involve opening current accounts with banks outside of the lending consortium without a no-objection certificate from lenders. Borrowers divert funds across different means, including shell companies, lapses in credit and underwriting.

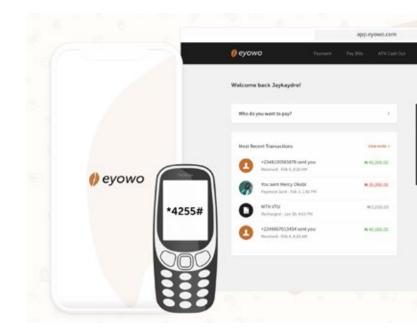
#### **RBI reports uptick in cyberfraud**

The same RBI report also <u>discovered</u> an uptick in cyberfraud in India's financial sector. Criminal activity in India's financial services sector increased by 50 percent over the past year, from 1,372 attacks in fiscal year 2017 to 2,059 during the corresponding period in 2018. The report also noted that cyberfraud accounts for roughly one-third of all reported banking fraud. The amount lost to the illegal activity was just 0.5 percent of all fraud-related losses, but there were still some notable cases. Mauritius banking group SBM Holdings said its Indian operations lost approximately \$14 million to cyberfraud, and Cosmos Bank lost approximately \$13.5 million when criminals made simultaneous withdrawals across 28 different countries.

#### New financial players

#### Eyowo app to boost financial inclusion in Nigeria

Tech company Softcom is looking to digital banking solutions to <u>boost</u> financial inclusion in Nigeria. The company recently launched a mobile app called Eyowo that enables users to make financial transactions, such as sending money to others, using just their mobile phones. The service is available to anyone with access to a GSM phone, meaning it is not limited to only users with smartphones.



Softcom believes the offering has the potential to boost financial inclusion, as internet connectivity in the nation is around 50 percent. Nigeria has one of the largest unbanked populations in the world — only 30 million people out of the country's population of 197 million had access to banking services in 2017.

### Tech company Rebtel plans to launch bank app in U.S.

Migrant populations in the U.S. could also see improved access to financial services thanks to Rebtel, a Swedish telecommunications company. The firm <u>launched</u> a digital bank last year aimed specifically at migrant workers, and it plans to expand to the U.S. market later this year. Rebtel's services, currently used by approximately 500,000 people, enable users to call 56 countries for \$10 per month and transfer money to those in emerging markets via an app. The company also offers an on-demand job program for U.S. cities such as Miami and Houston, which have large populations of migrants.

Philip Mikal, Rebtel's chief product officer, noted that migrants who relocate to new communities often face financial challenges, including unemployment and a lack of credit history. Rebtel recently secured \$8 million to develop its digital banking services, which it hopes will help migrants gain access to financial resources.

#### B-Social aims to build social bank

Meanwhile, London FinTech B-Social is looking for approval to operate as a "social bank." The "social finance" app offers expense tracking and monitoring and allows users to create groups of friends, with whom they can split bills for shared expenses and record settlements. It currently offers users a Mastercard debit card to assist with this. Purchases made with the card can then be labeled as individual or group transactions. According to the company, when groups make purchases, individuals within them essentially act as banks by lending others money, tracking down payments and resolving debts.

B-Social recently secured £3.2 million (approximately \$4.2 million) in seed-round funding that it plans to use to develop its platform and mobile technology, attract more users and hire additional staff. One of the ways in which it plans to improve its platform includes designs that will allow it to operate as a fully licensed social bank. The firm has applied for a banking license with the Prudential Regulation Authority (PRA) and the FCA.

### Deep Dive | FIGHTING FRAUD AT THE GENETIC LEVEL

Digital technology has revolutionized the way customers engage with their banks, and technological advancements are granting individuals and businesses new ways to manage their finances and access more personalized services. The increasingly digital nature of banking has also opened new avenues for fraudsters. Customers are now performing high volumes of transactions that are processed automatically, giving criminals seemingly limitless chances to commit fraud.

This is particularly true in the European market, which recently experienced new developments that could leave it vulnerable. Open banking in the U.K. and the updated Payment Services Directive (PSD2) encourage greater competition in the financial services sector by requiring banks to share consenting customers' information with third parties. Companies seeking to comply with these new standards risk making themselves vulnerable to bad actors.

This potential for wrongdoing presents a twofold challenge for banks. First, FIs must work aggressively to detect fraudulent activities by investigating and anticipating suspicious behavior. Second, they must take steps that do not negatively affect their customers' experiences. AI, ML and risk management tools will play significant roles in keeping customers satisfied and safe from fraud.

As banks, FinTechs and TPPs work together to deliver new services for their customers, they must also stay vigilant against fraudsters. In addition, their joint anti-fraud efforts will require a renewed and deeper understanding of how fraud works in the digital era. Changing the way FIs perceive fraud will be key to responding to incidents when they are detected and preventing future attacks.



#### DEEP DIVE



The following Deep Dive examines how cybercriminals are getting more creative in the digital era, why FIs should use **genetic mapping** as a fraudfighting strategy and how new players can establish themselves as legitimate partners in the fight against fraud.

#### A wide array of options for fraudsters

Digital banking's growth is presenting bad actors with new ways to obtain consumers' data, fraudulently perform financial transactions and steal money. There have recently been several notable events that <u>highlight</u> just how creative these fraudsters have become. A gang of cybercriminals in 2016 used malware and the international SWIFT system to make roughly 35 withdrawal requests from Bangladesh Bank in an attempt to steal roughly \$1 billion. Thirty of those transactions, valued at approximately \$850 million, were blocked by the Federal Reserve Bank of New York. The thieves were still able to transfer about \$101 million to banks in Sri Lanka and the Philippines before they were flagged because of a spelling error. Only \$20 million was recovered.

Tesco Bank, which is owned by a supermarket group in the U.K., was also hit by cybercriminals that year. Fraudsters were able to withdraw £2.5 million (\$3.22 million) from approximately 20,000 accounts. Analysts believe the hackers exploited a vulnerability in Tesco Bank's website that appeared when customers made online purchases.

Cybercriminals are becoming more brazen, and banks are <u>struggling</u> to stay on top of their anti-fraud efforts. Just 37 percent of banks had complete fraud detection management systems or were transforming them as of late 2018, and only 16 percent were able to detect fraud as it happened.

Al and ML solutions are promising to boost that portion by stopping fraudulent incidents as they unfold. These tools can also be used to prevent potentially illegal acts. Before this can happen, financial ecosystem players must understand how fraud is committed and how it will change in the future.

#### DEEP DIVE

#### Decoding the genetics of fraud

Embedded in the financial ecosystem are FIs and consumers who are using financial tools like credit cards, debit cards and bank accounts to perform transactions. Nestled among these trustworthy players are the fraudsters who stay active in the broader payments ecosystem.

The complexity of the payments ecosystem can be compared to DNA and genomes when it comes to detecting bad actors and highlighting how their activity differs from acceptable behaviors. By using AI, ML and risk analysis, fraud can be pinpointed and, ideally, prevented.

This DNA-like approach to fighting fraud creates a visual analysis of illegal activity and highlights different connections — such as the machines used to commit fraudulent acts or the locations the crimes were committed — ultimately uncovering the layers of fraud, from individuals to bots to broader networks. This approach can help quickly detect it when aided by tools like AI and ML.

The effects of financial fraud can be far-reaching and include lost funds for consumers and damaged reputations for FIs. A biology-based approach to detecting and isolating illicit financial activities could keep cybercriminals' harmful impacts from spreading as they get more creative.

#### Other tools to fight fraud

Al and ML are valuable fraud-fighting assets, but human beings also play a central role. That's why a poor culture of control within banks could be an advantage for fraudsters.

A lack of "control culture," in which employees fail to follow the correct processes to address fraud, is highly enticing for fraudsters targeting FIs. A recent <u>report</u> stated that 72 percent of European fraudsters found a company's weak control practices to be a significant opportunity. Because fraudsters want to exploit internal vulnerabilities, the best way for an FI to improve its anti-fraud measures is to think human and implement a strong anti-fraud culture that works alongside AI and ML technologies.

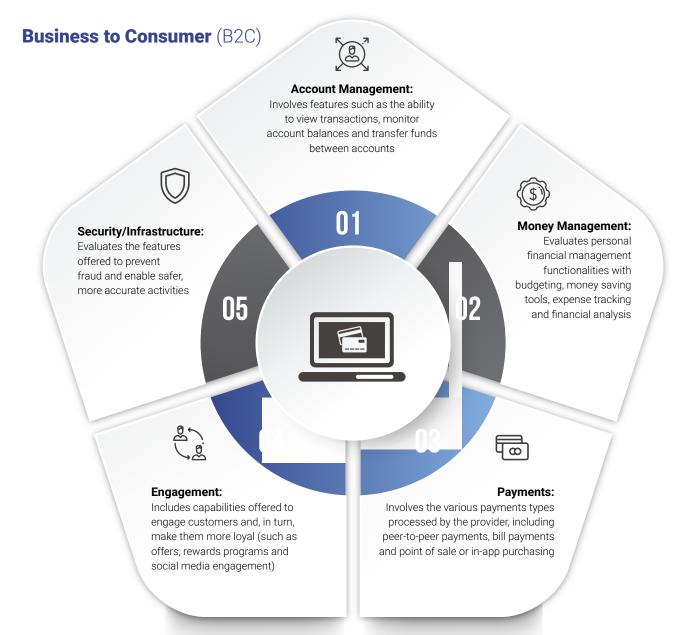
Fraud is continuing to evolve in the age of digital banking. Examining suspicious activity and attempting to understand fraud at its root level, combined with support from human analysts, could be key to staying one step ahead of criminals.

# **Scoring Methodology**

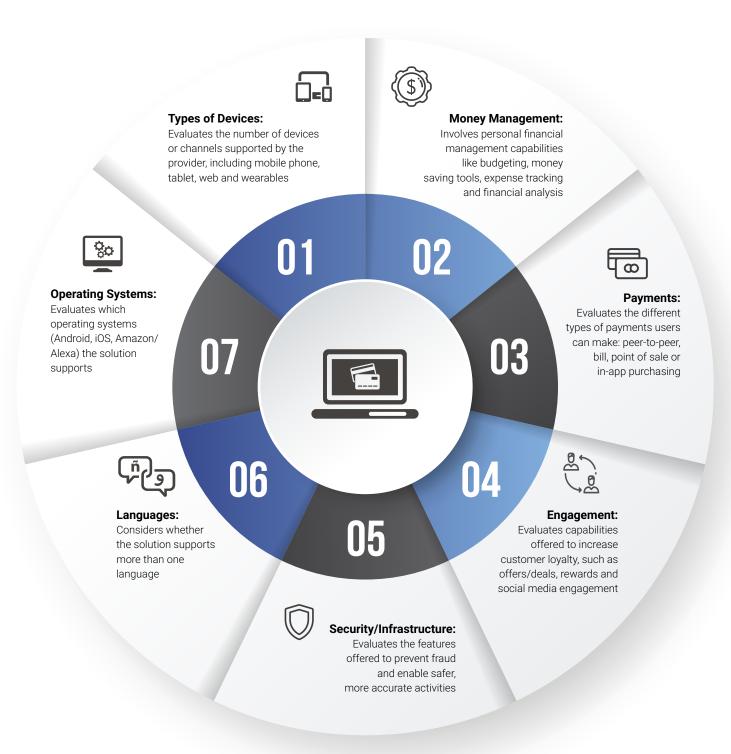
# DIGITAL BANKINGSCORECARD

The Scorecard analyzes and evaluates individual providers across several capabilities, depending on whether they offer bank-to-consumer services or digital banking solutions for banks. The capabilities are weighted accordingly.

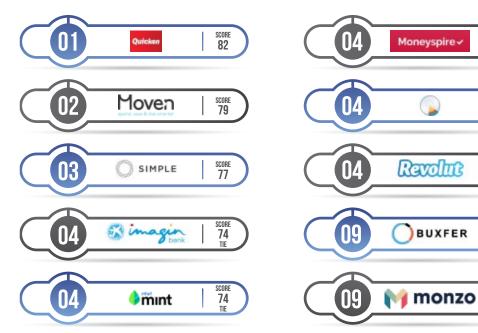
PYMNTS will periodically update scores based on new developments. If you would like your company to be considered for inclusion in the Tracker's Scorecard, or if you wish to have an existing listing reconsidered for an update, please head over to our profile <u>submission/update</u> page.



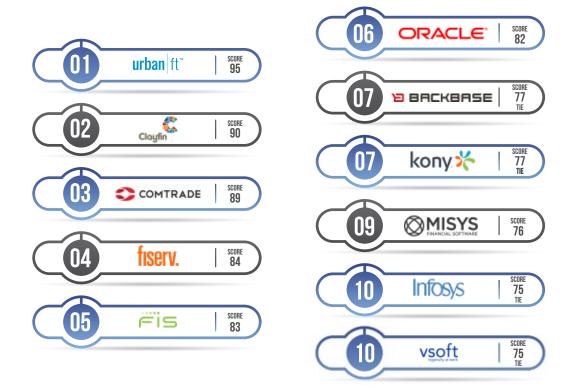
#### Business to Business (B2B)



### **B2C TOP 10 RANKING**



### **B2B TOP 10 RANKING**



SCORE 74 TIE

SCORE **74** TIE

score 74

TIE

SCORE 73 TIE

SCORE 73 TIE

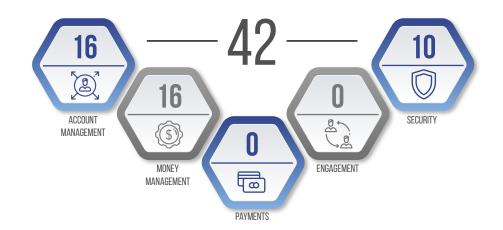
# **NEW ADDITIONS TO THE DIGITAL BANKING TRACKER**

### **BUSINESS TO CONSUMER (B2C)**





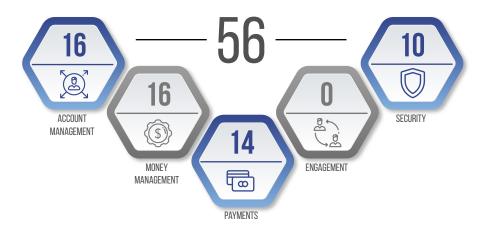
**Company:** 22seven **Founded:** 2012 **Categories:** Account Management, Money Management, Security



22seven is a money management application that brings together bank accounts, cards investments, loans and rewards in one digital place. 22seven enables users to track their money, as the app identifies each transaction and automatically puts it into a category like groceries, rent or pets. Users can also get personalized budgets automatically based on their spending habits and investment tools. The app offers 256-bit data encryption.



Company: Aditya Birla Money MyUniverse Founded: 2012 Categories: Account Management, Money Management, Payments, Security



Offered through Aditya Birla Customer Services Limited, MyUniverse is an online money management app that enables users to track their money and invest it. Users can see all their financial details in one place by linking bank accounts, credit cards, mutual funds, stocks, loans, insurance, reward points and bills to MyUniverse. Users can also add their bill payments, set up reminders to pay them on time and use the auto pay option, which automatically pays bills before the due date every month.

#### SCORECARD - B2C



Albert is a personal finance app that connects to all of a users' financial accounts with the intention of improving their financial lives. It also allows users to take financial actions directly from the app.



Ally offers customers a digital banking platform. Its solution includes mobile banking access and a team of customer service respresentatives.



Anishu develops HomeBudget, an app that allows the tracking of expenses, income, bills due and account balances, as well as the creation of budgets and display of financial information in charts and graphs. The service comes with a Family Sync feature that syncs different devices within the same Wi-Fi or 3G network and allows members of the same household to work together in same budget.



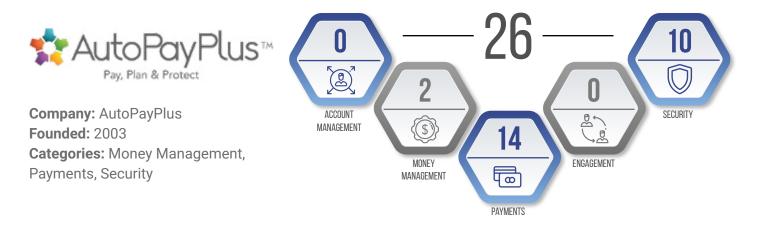
Aspiration is a financial firm that offers banking and investment products. Aspiration's Summit Account is a checking account with an app available for both iOS and Android that doesn't charge maintenance or ATM usage fees and can be used to pay bills and deposit checks, among other functions.

PAYMENTS

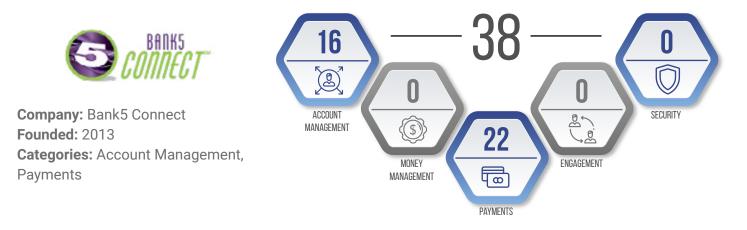
#### SCORECARD - B2C



Atom Bank is a mobile-only bank that provides users the ability to view all of their transactions, and its Fixed Saver tool helps them increase their savings. The digital bank uses biometric security and offers both face and voice recognition.



AutoPayPlus has developed an online personal financial management service that helps users to coordinate and accelerate the payoff of loans, create budgets and perform other financial tasks. The company's mobile app allows users to add and keep track of their rent payments, utility bills and other household bills.



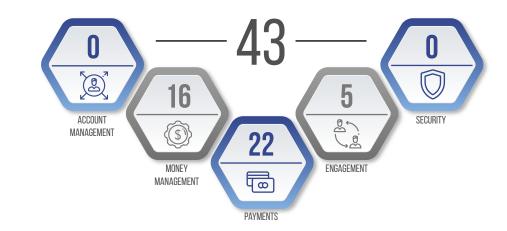
Bank5 Connect is a division of BankFive, a community bank based in Massachusetts. The company offers services that include checking accounts, saving accounts, bill and P2P payments and a mobile app.



Bank of Internet USA is an internet-only bank that allows customers to transfer funds, manage their personal finances, monitor their spending habits and pay bills using its Mobile Banking App and FinanceWorks service.

# BankMobile

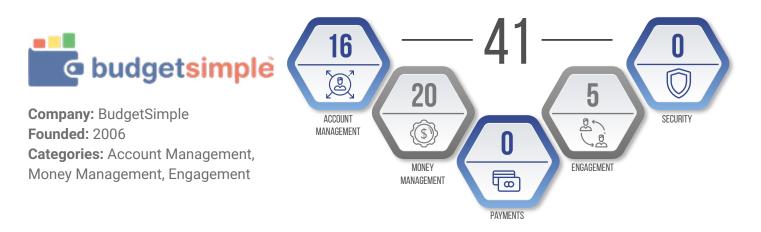
**Company:** BankMobile **Founded:** 2015 **Categories:** Money Management, Payments, Engagement



BankMobile is a digital bank that enables customers to see their daily financials and set goals and budgets to save money. Users can open an account, deposit money by taking a picture of a check using their mobile device's camera, send money to a friend using a cell phone number or email address, and pay bills.



Bettr Bank offers a digital banking platform with spending features, insurance and investment possibilities. It also provides a mobile version.



BudgetSimple is a free financial planner that helps users create a balanced budget. By logging on to Budget Simple from a computer tablet or smartphone, users can easily track their spending and understand their finances better. BudgetSimple also gives users financial advisory tips.



BUDGT is a day-by-day financing application intended to help users with small monthly incomes manage their money and increase their savings. The app enables users to keep track of their expenses by creating daily automatic budgets based on what the users spent during the month, set up a personal monthly budget and check their daily expenses by category.



The mobile-only bank bunq offers its customers a digital banking solution that combines bank, wallet and card services. Its mobile application enables users to open multiple accounts and send money instantly to others by using their phonebook contacts. bunq also offers a group bank account feature for shared expenses where users can split bills and set budgets.



PAYMENTS

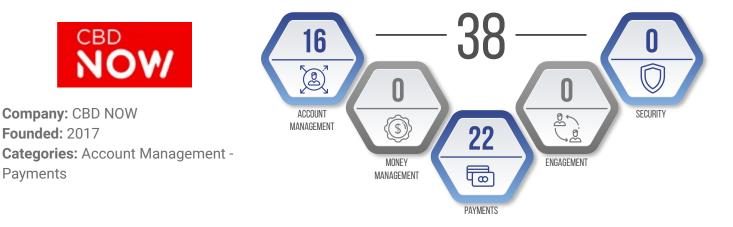
Buxfer is an easy-to-use online management software for personal finance. Users are enabled to track bills and expenses among friends and families. Buxfer allows users to securely enter data from any bank and see all accounts at one place. The solution helps users to understand their spending, as it offers tools to categorize and visualize spending trends and also enables them to set weekly, monthly or yearly spending limits per category. Users can also receive alerts to their mobile devices when they exceed their budget and reminders for upcoming bills. In addition, Buxfer offers payments capabilities such as send money online and settle bills. The company provides a secure infrastructure, compliant with industry standards such as PCI and SOC 3.



CashControl lets users add their income or expenses, organize their spending in categories and budget and monitor them in real-time. Besides, CashControl reminds users to pay recurrent bills and helps them to spend less by setting target goals. The app also offers financial forecasting, analysis and solutions to financial problems, detailed reports on expenses, incomes and loans.



Cashpath Financial is a FinTech developer company and the creator of the Cashpath app. Users can link all their bank accounts and credit cards to the app and use a group of personal finance management tools that help them to gain a better control over their expenses. Cashpath predicts income and bills and can adapt the users expending and saving plans to unexpected expenses. Users' data is protected with bank level security.



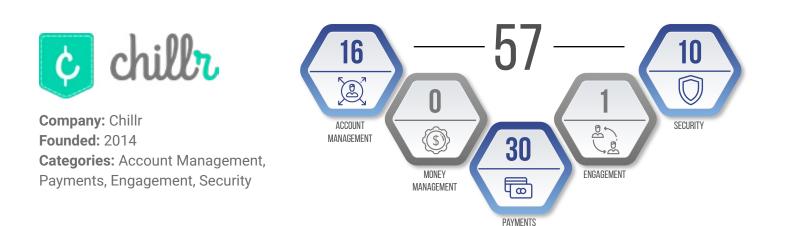
CBD NOW is a United Arab Emirates-based digital bank. Its accounts can be opened with a picture or an ID scan, and it offers a mobile version and a debit card without minimum requirements.



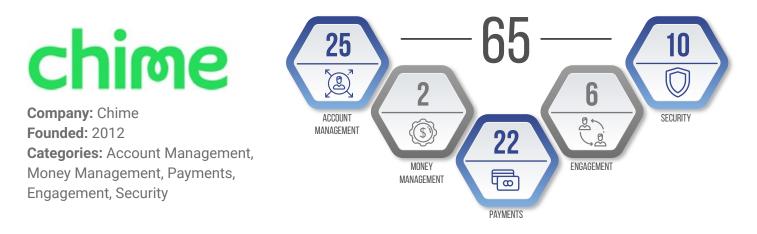
Centralway Numbrs is a financial services company with an app allowing users to control their account activity, analyze spending and send money. Users can also apply for a new bank account, loan or credit card through the app.



Charlie offers web-based financial management tools. Its solution includes an online bot that links with messaging and mobile apps to control personal finances and spending.



Chillr is a mobile bank that offers features ranging from money management to payments. Chillr users can pay their friends with the app's P2P capability or merchants either in-store or online, among other options.



Chime is a branchless bank account offering customers a debit card, spending account and savings account. The Chime app — available for both Android and iOS — enables users to pay bills, transfer funds between accounts and send checks, among other features.



ChimpChange provides mobile digital banking services. The company enables users to send payments and do all their daily transactional banking from its mobile app. ChimpChange users get a prepaid Mastercard which can be used to make in-store/online purchases, pay bills and withdraw cash. The firm uses bank level security, secure two-factor authentication and biometric verification.

#### SCORECARD - B2C



Chip is an automated savings bot app that connects to a user's online banking account, from where it can calculate how much money the user can afford to save and then moves that amount automatically into a Chip savings account.



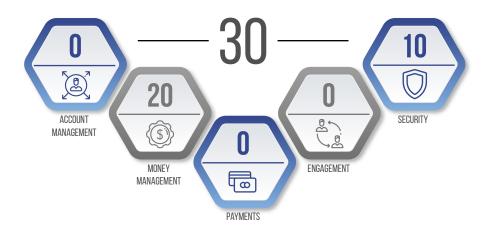
Clarity Money's app aims to help users reduce expenses in bills by looking for discounts and coupons, review where their money has been spent, promote credit cards that fit users' behavior and create a savings account.



Cleo AI is an artificial intelligence startup based in London. It allows users to access spending insights by dividing transactions into merchants or categories, helping them save money. All interaction occurs through text messages or Facebook Messenger.



**Company:** CountAbout **Founded:** 2014 **Categories:** Money Management, Security



CountAbout is an online personal finance software provider that helps users track their finances and manage their money. The software offers a wide range of money management tools, including budgeting, transactions categorization, graphs for income and statements, recurring transactions, and split transactions among others.

#### SCORECARD - B2C



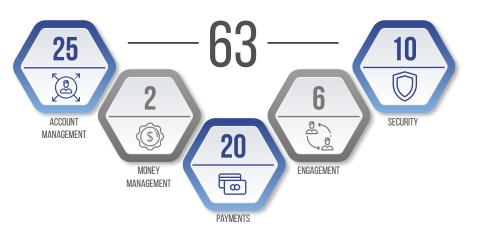
DailyCost has developed an expense tracker that is designed to help users organize their personal finances. The app, which is available in iOS, enables users to track daily expenses and supports different currencies, automatically updating their exchange rate.



Dayspring Technologies is a web and mobile applications development firm. The company's GoodBudget app is designed to help users organize their spending and savings by categorizing their budget across various needs. The GoodBudget app also allows multiple household users to sync their budget using Android and iPhones.



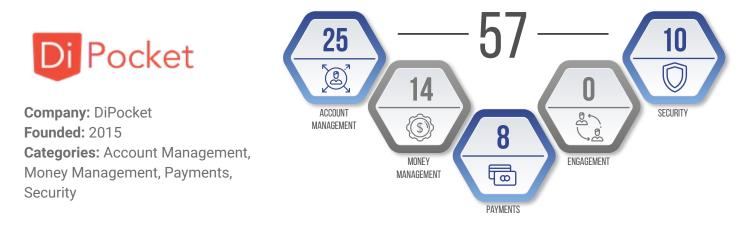
**Company:** Debitize **Founded:** 2014 **Categories:** Account Management, Money Management, Payments, Engagement, Security



Debitize is a financial startup that controls and monitors user-linked credit card account transactions and automatically sets aside funds to cover purchases. Once the bills arrive, Debitize automatically pays them with the money saved. Users can also set spending alerts and customizable notifications to be on top of their financial situation. Regarding engagement features, users are enabled to earn rewards by using their credit cards. Debitize offers bank-level security features, 256-Bit Encryption and ID verification.



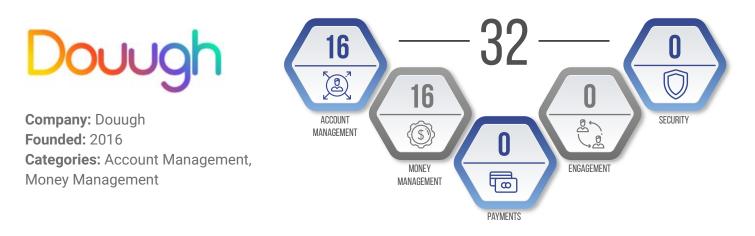
Digit helps users save by linking a user's bank account to the service and analyzing their spending habits. Based on income and spending, Digit will determine how much of a user's money it can set aside, and it will transfer that amount to a savings account. The company also allows users to check their latest transactions and savings via text message.



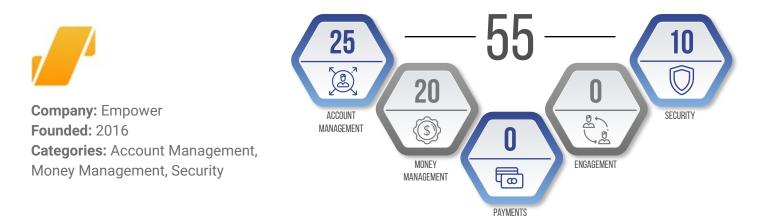
DiPocket offers a mobile banking app for iOS and Android, a prepaid debit Mastercard and several features including immediate money transfers between DiPocket users, real-time transaction notifications and spending tracking.



Dollarbird is an app allowing users to manage their personal finances. With Dollarbird, users can track, categorize and plan expenses in calendars, which they can share person-to-person (P2P) for joint financial planning.



Douugh is a FinTech company that is developing an AI banking platform. The platform's virtual assistant, Sophie, aims to help users pursue financial stability, reach their personal savings goals and offers real-time insights into users' spending habits.



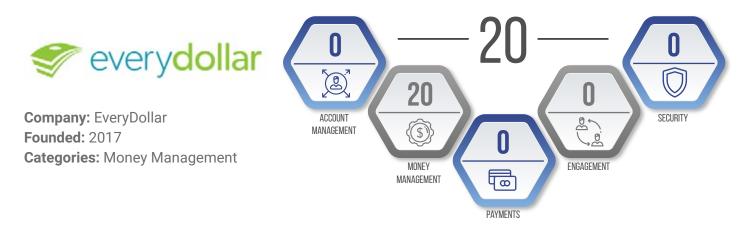
Empower is a smart money manager. The company's solution allows users to connect and move money between their accounts, set and track spending limits, and receive notifications with tips for saving and about money management.



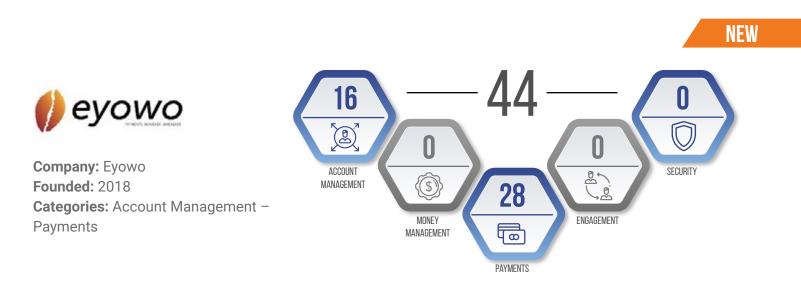
EQ Bank is a digital bank that allows users to use their smartphones to pay bills, check their account balance, transfer money, cash checks, track spending habits and set financial goals using the EQ Bank Plus Savings Account.



Even is a financial management software developer – "the supply side platform for alternative finance." The company's app helps users maintain steady income over time. By calculating the average income of individual users, the app establishes a savings rate when income is above average and, in turn, offers the user an interest-free deposit when income comes in below average. Even offers data encryption to secure users information.



EveryDollar offers an Android-based app for monthly budgeting and spending allocation. It also helps users plan for approaching expenses.



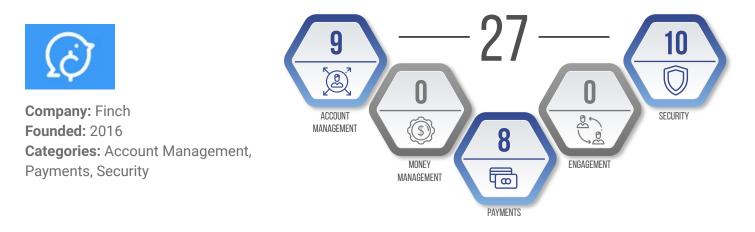
Eyowo is a digital payment solution that allows users to make P2P transactions, bill payments and cardless ATM withdrawals without a bank account. The mobile app was founded with the intention of offering financial services to unbanked residents of Nigeria.



Ffrees provides money management tools to help users stay in control of their finances. The firm offers an account dashboard and smartphone-friendly access. Users can see all their transactions, set budgets, save money and get spending rewards when making in-app purchases. They also receive a Visa card to make purchases in-store and earn points.



Fidor Bank is an online bank that covers retail and business banking ranging from basic bank accounts and savings bonds, to various lending offers. It includes the "instant transfer to friends" feature and allows user to access their balance and transaction history to maintain an up-to-date overview of all transactions and set notifications for their incoming and outgoing payments. The bank also offers a Debit MasterCard which allows users to make online and offline purchases as well as cash withdrawals. In addition, Fidor Bank provides social media engagement features and enables users to connect their bank account with Twitter, Facebook, YouTube, Google+, LinkedIn and Instagram. Moreover, it offers a bonus program that rewards users for helping other Fidor community members.



Finch is a FinTech startup focused on personal financial solutions. With the Finch app, users can pay friends, run tabs, split bills and receive spending insights.



PAYMENTS

Finicity offers a platform and API for financial technology developers to integrate customer financial data into their apps. The company's budgeting app, Mvelopes, is a personal finance management solution that enables users to import their bank and credit card account, create online budgets and track their spending. Mvelopes uses encryption technology to protect sensitive information during transmission.



Fintonic's mobile banking tools are intended to help customers better understand their finances. By entering all of their accounts as well as their financial information, users can organize their expenses into categories, receive automatic monthly forecasts, analyze their spending habits and set up alerts for when money movements are detected.



Frollo is a personal finance and budget app that lets you manage all of your expenses and track savings. It allows users to set goals and provides them with graphs and insights into personal spending.



Green Dot is a financial and money management solutions provider that offers consumers financial services through retailer locations including Walmart, Walgreens, Kmart, Kroger, 7-ELEVEN and more. The company developed GoBank, a low cost online bank that offers direct, cash and check deposits. GoBank also allows users to set up budgets to understand their spending, send money via email or mobile number and set reminders to pay their bills. It also offers social engagement programs on Facebook, Twitter, Instagram and YouTube.



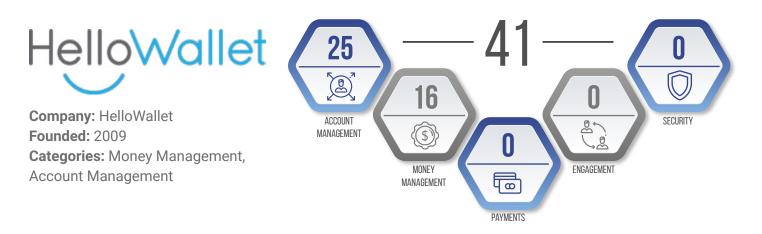
GoHenry offers young people a tool to learn how to manage money responsibility under the guidance of their parents. The company provides users an app with PFM tools and a VISA prepaid debit card.



Handy Apps is an app developer that offers personal financial manager Expense IQ. The Expense IQ app enables users to track their expenses and organize them in categories. Expense IQ also delivers bill reminders and reports on spending behavior.



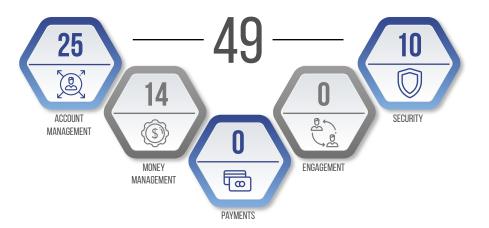
Halcyon is a mobile software development company whose products include Dollarbird, a personal financial manager enabling users to organize their expenses and income by seeing where money is going and how transactions evolve over time.



HelloWallet is a web and mobile app designed to provide employees with personalized financial guidance. It helps employees make the most of their salary and benefits, build financial wellness now, and get ready to retire when the time comes. The app also offer step-by-step guidance around Emergency Savings, Retirement, Debt Reduction and more. Bank accounts sync for real-time updates, allowing members to access transactions and balances across all their accounts.



**Company:** Honeydue **Founded:** 2016 **Categories:** Money Management, Account Management, Security



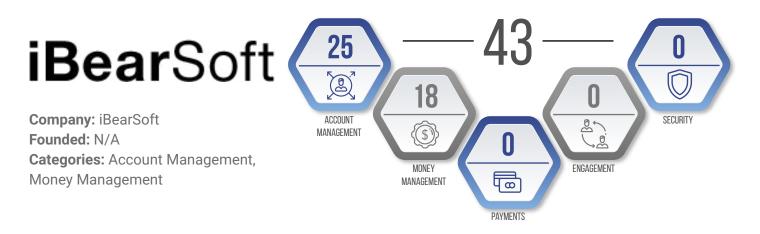
Honeydue is a personal finance app for couples. The app allows user to track their bills, bank balances and spending together: couples using it can see how their spending is divided by categories.



Hoot, a subsidiary of FinTech startup Qvivr, offers a bank account, smart debit card and app. The Hoot app offers transaction categorization and spending alerts and has a customizable display.



Hufsy is a smart digital bank account and full-scale financial system offering transaction monitoring, financial tools and bookkeeping solutions.



iBearSoft develops apps to help users better manage their expenses, such as Money Pro, Checkbook HD and Bills. Money Pro enables users to view unlimited number of accounts in one place (checking, savings, credit card, etc.), set transactions as recurring and check their balance history. Moreover, users can create budget entries and add transactions into different categories. Money Pro offers detailed reports with trend charts, income and expenses, cash flow and a projected balance.



Created by CaixaBank, imaginBank is a mobile-only bank that lets users manage their money, see their transactions and set alerts, make P2P payments, and pay at the point of sale using the app. Among other features, the digital bank also enables users to check their spending, see all of their purchases and bills sorted automatically by categories, and set monthly spending budgets.



InEx Finance, owned by D&D Limited, is an online personal finance software. This solution brings all accounts together in one secure place and helps users efficiently manage their money. Users can track their expenses and set short or long-term financial goals, manage their debts, make deposits, monitor payments and set email notifications about due dates. InEx also provides around 30 different reports, with charts and tables that help users to read their finance trend by compearing spending over time.



Infinite Kind is a software developer company which creates different types of mobile, desktop and server applications. Infinite Kind developed MoneyDance, an easy to use personal finance app that offers a wide range of features including online banking and bill payment, account management, budgeting and investment tracking. Users can set up a payment schedule for single or recurring transactions, and use the graphing tool to generate visual reports of their income and expenses. MoneyDance handles multiple currencies and virtually any financial task with ease.

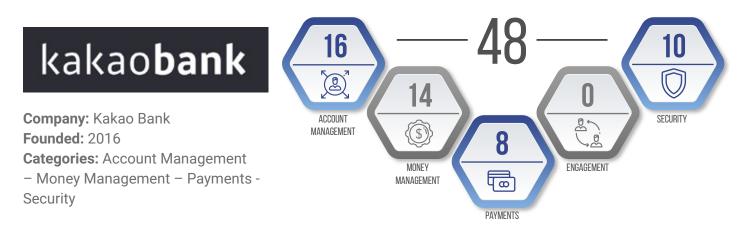


Acquired by Intuit in 2009, Mint lets users better manage their money. By connecting accounts, cards and bills to the app, the user can create budgets and plan saving objectives. Mint will also tell the user when their expenses are exceeding the planned budget, when unusual or suspicious money movements arise, how much the user is spending in fees and when a bill payment is around the corner. Intuit Mint also provides free credit scoring and portfolio managing tools. Users data is secured and encrypted with a 256-bit encryption level.



The Jenius app proposes ways to manage personal finance, and includes a savings account, worldwide access and important safety features.

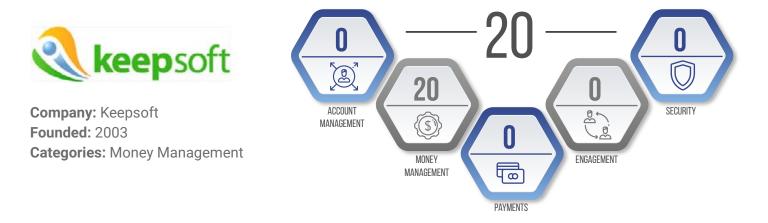
SECURITY



Kakao Bank offers a digital-only banking service. Its solution includes features like deposits, loan applications and money transfers, among others.



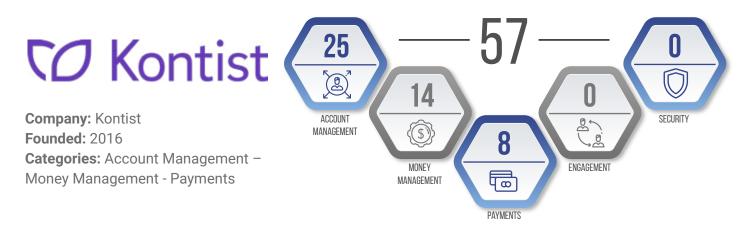
KBank provides online banking services. Its features include deposits, loans, a credit card offering, loan applications and wealth management capabilities.



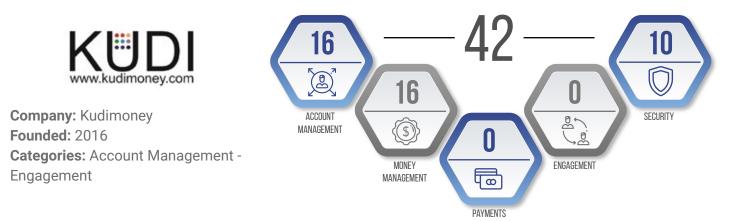
Keepsoft Home Bookkeeping, owned by Keepsoft, is a finance management tool that enables users to keep track of personal and home finances. The app helps users to track their expenses and incomes, and control borrowed and loaned money. It also allows users to analyze their finances by using visual reports and charts.



Koho is a Canadian FinTech company. The company's app enables users to track spending and savings patterns. The company also offers customers a spending account associated with a Visa card that contains features such as bill payments, money transfers and saving goals.



Kontist provides banking solutions for freelancers, including business accounts, tax tracking, credit cards and system integrations that work with accounting and bookkeeping tools.



Kudimoney offers an online banking solution designed to make it easier for customers to pay bills, family and friends. It also offers money transfers via messaging and a chatbot, among other features.



LearnVest helps the user develop a saving plan. Their approach is based in four steps: defining credit card debt, emergency savings and retirement goals, later adding personalized goals over them, selecting a budgeting strategy and finally getting guidance on how to archive the defined goals. The company provides not only online/mobile tools to help the user in the saving process, but also a dedicated financial planner available via email. Learnvest uses 128-bit encryption in order to keep users information fully protected.



LifeCounts is a mobile service that allows users to securely link their financial accounts from different institutions to the platform and check their account balances and transactions. The app tracks user spending and provides alerts and insights.



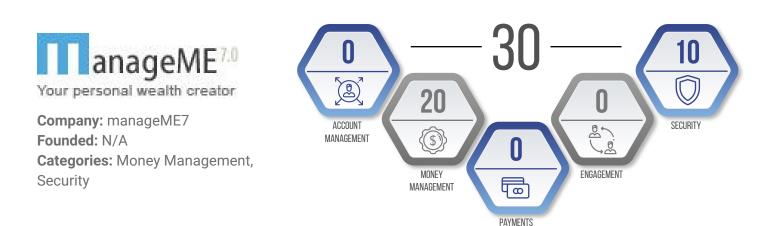
Limitless Technology Group is a financial technology company developing solutions to aid financial institutions and banks. The company's moneysmart app is designed to help users better manage their money and increase their savings. Customers can link all their accounts into moneysmart with a single view, confirm their fixed incomes and expenses and improve their money management.



Loot Financial Services is a personal finance management app that gives users tools to better understand and control their money. Customers can group their transactions into categories, compare their spending habits against other users and set up goals to let the app budget their daily spend.



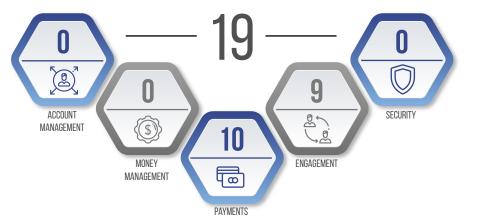
Lunar Way provides digital banking solution for young consumers. Its offering is focused on convenience and technology.



manageME7 is an online money management app that helps users track their spending. Users can create multiple accounts in different currencies and add transactions. They can also categorize their expenses into different categories, add budgets and view financial reports based on accounts, transactions or budget type.



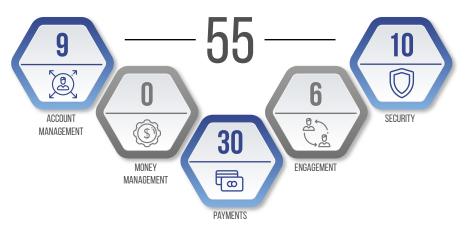
**Company:** MashreqNeo **Founded:** 1967 **Categories:** Payments, Engagement



MashreqNeo is a digital bank powered by private banking company Mashreq. Its customers can apply for various bank accounts like checking or salary savings, make peer-to-peer (P2P) and point-of-sale (POS) payments and receive rewards and offers.



**Company:** MemoryBank **Founded:** 1982 **Categories:** Account Management, Payments, Engagement, Security



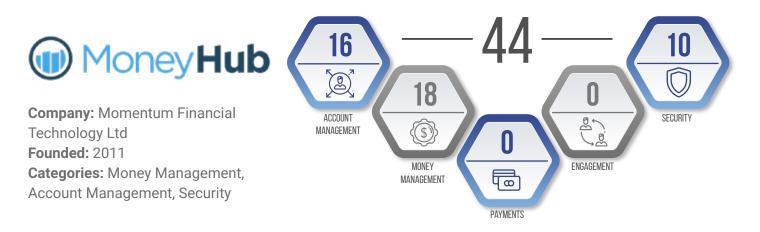
MemoryBank, a division of Republic Bank & Trust Company, is a digital-only banking platform offering different capabilities across its products. These include push notifications, moneyback rewards, money transfers and the use of Apple Pay and Samsung Pay.



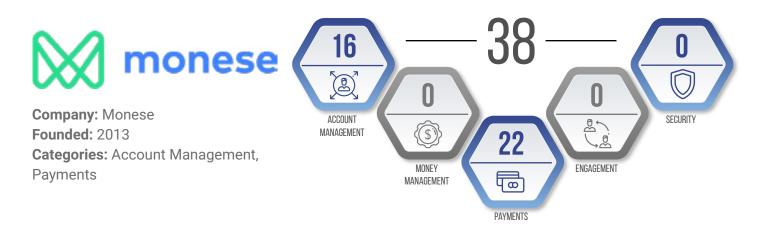
Mobills develops personal finance management solutions. Its products are designed to provide credit card management, expenses categorization, saving tools, bill reminders and charts to display users' financial data, among other features.



Mogo is a financial technology company that offers their users three different features: a credit score updated monthly, a spending account that allows for transaction tracking and a preapproval on a personal loan.



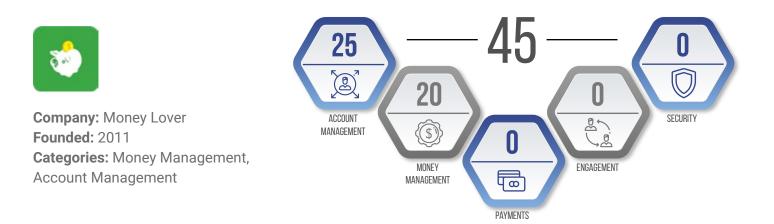
Momentum Financial Technology Ltd develops money management and financial applications. The company operates MoneyHub, a money management startup designed to help users manage their finances and control their investments. The app gives clients a picture of their financial situation, and users can connect their MoneyHub account to their bank accounts, credit cards and investment accounts. MoneyHub intuitively categorizes users' transactions and enables users to understand their spending habits.



Mobile banking services firm Monese offers solutions that allow individuals and businesses to open U.K. banking accounts from their smartphones. Upon opening a Monese bank account, users can receive salary payments, get a contactless card, deposit cash, send money to friends, pay bills, make international transfers and manage their money.



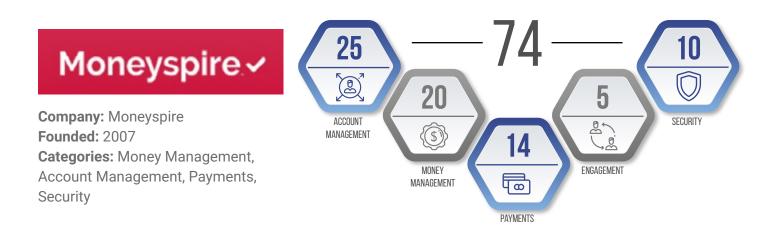
MoneyLion is a finance app designed to provide users with alternatives to traditional borrowing and investing. It also offers budgeting and spending tools, financial tips and a rewards program.



Money Lover is a smart application that offers users finance and expenses management tools. The app enables members to track their expenses over time and set monthly or annual budget in order to cut back on extra and non-essentials and save more money. With Money Lovers, users can schedule for upcoming payment or recurring transaction and get notified on the due date. Moreover, it helps them to understand their spending trends and provides visualized bar and pie charts which show accurate picture of their financial standard.



Money View is a financial management app that helps users to organize their expenses and manage banking accounts. The app allows users to track their money and get financial analysis and real-time account balances. The app also allows users to set reminders for bill payments and easily pay them.



Moneyspire is a personal finance software company. With Moneyspire, users can track their accounts and see their account balances. The app enables users to record their transaction activity, set budgets, categorize their spending and income, set bill reminders, and get financial reports and charts. User's personal information is password encrypted with AES 128-bit military-grade protection and all online banking features are done through encrypted SSL connections.



Monzo is a digital bank with headquarters in the U.K. The company offers a contactless prepaid Mastercard in addition to other tools like real-time spending notifications, instant transfers to other Monzo users and data insights on money spending, among others.

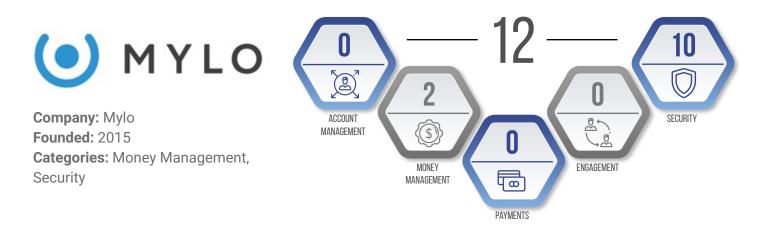


PAYMENTS

Moven developed a digital banking app that allows users to manage money and analyze monthly expenditures. The company helps users to get an accurate pictue of their spending behavior by tracking their expenses and instantly adding each transaction into different categories. Additionally, Moven offers P2P and bill payments as well as a prepaid card for in store and online purchases with NFC sticker to make POS payments. Regarding customer engagement, Moven has an offers marketplace that provides deals.



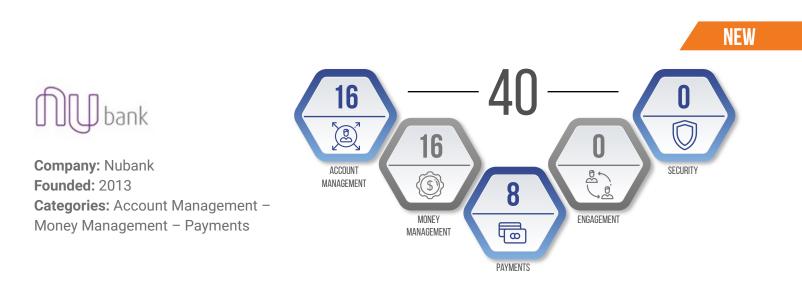
MyBank offers a digital money lending platform. The company aims to provide banking services and loans for small and micro-sized enterprises.



Mylo is a personal finance app that automatically rounds up every purchase the user makes and invests the spare change. Mylo also provides insights into the user's finances regarding banking fees, loan interests rates and mortgages, among other services.



Neat is a mobile checking account solution for underbanked people and companies in Asia. It enables payments, salary reception and person-to-person (P2P) transactions.



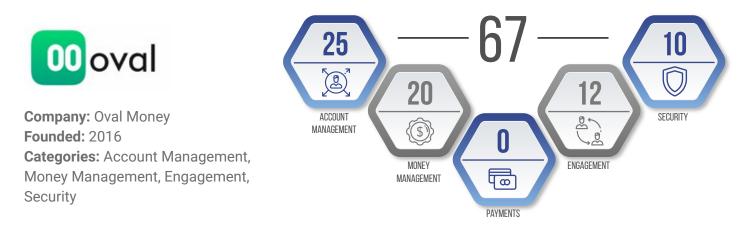
Nubank is a FinTech company that acts as a digital bank and credit card operator. The company's products include a digital account, known as NuConta, and an international credit card – both of which do not incur fees. Its mobile app allows users to track credit card transactions in real time, block credit cards, apply to raise limits and contact customer support.



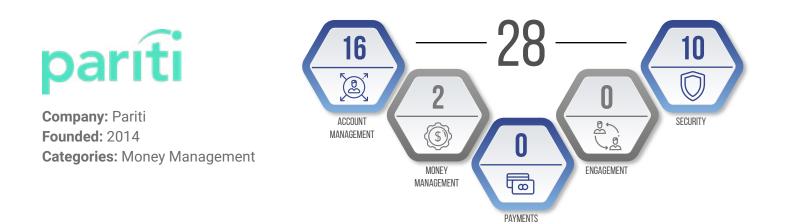
NUMBER26 develops a fully digital bank service that allows users to withdraw and deposit money in around 6,000 shops across Germany. It also offers money transferring push notifications. The service also allows users to transfer money to friends (without knowing their bank account number), online purchases, categorize their expenses and activate customized overdraft limits. Users can protect their accounts by setting access through their fingerprint and they are able to block and unblock their cards with just one click.



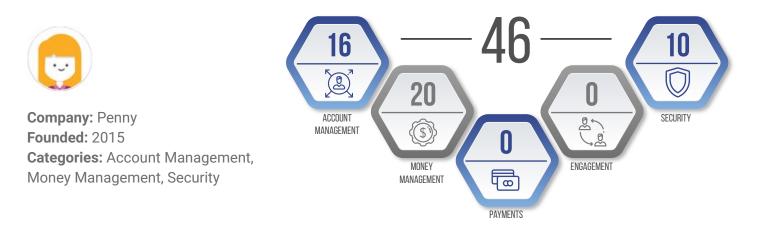
Osper is a mobile banking service designed to help parents teach their children smart financial habits. Osper offers young people a debit card and access to a mobile banking app that allows them to categorize their spending. Parents can use the mobile app to monitor their children's spending habits, check balances, transfer money and perform additional services.



Oval Money offers a mobile app for iOS and Android that helps people save money through round-ups of transactions, a fixed percentage of transactions or by a fixed amount. Through integration with Facebook, Oval Money also allows users to contribute to their savings each time they post on social media.



Pariti, formally Pariti Technologies Limited, is a company developer of the savings app of the same name. The app works on an expenses prediction engine which, based on income and future bills, allows users to know how much money they can spend without transposing their budget boundaries. The app makes a daily update where the user can see how much money is left to spend.



Penny is a personal finance app that helps the user track income and spending by chatting with a personal finance manager, a chatbot named Penny. Penny uses a user's statement history to provide them with different information such as spending insights, forecasts or upcoming bills.



Pepper is a mobile-only bank and part of the Leumi Group. Pepper's services include credit cards, account transactions, loans and P2P payments.



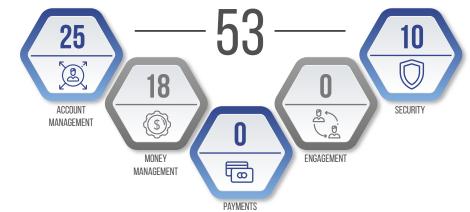
Personal Capital develops tools and wealth management solutions to help individuals manage their finances. The company's solutions enable users to obseve their spending activity by account and category, receive income reports and analyze their net worth and portfolio balances, among other capabilities.



Plum is a personal saving assistant that works on Facebook Messenger. Users can link their bank account to the software and allow Plum to analyze their transactions to understand their spending and income. The company can provide users with a personal rate of saving, which will then be transferred into a Plum savings account.

# PocketBook

**Company:** Pocketbook **Founded:** 2012 **Categories:** Account Management, Money Management, Security



Pocketbook is a personal financial manager solutions developer. Its app connects to users' bank and offers a real-time view of finances, automatically organizing expenses by category and displaying the information as charts and notifications.



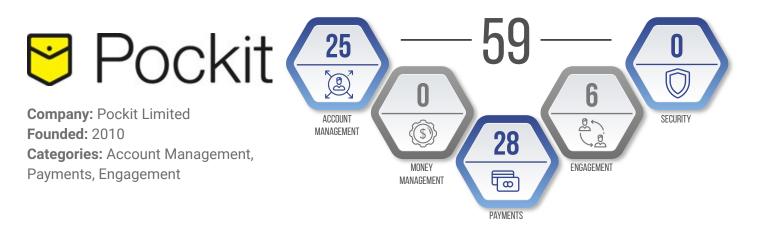
Pocket Expense is finance software designed to help users track and understand their finances. This software brings all financial accounts together and categorizes transactions, tracks bills and sets reminder alerts, and lets users set budgets as well as financial goals. Users can pay the bills with just one tap. Pocket Expense also provides statistics and reports of all transactions.



PocketGuard is a personal finance management application that enables users to connect all their financial accounts and create budgets, track their money and categorize their expenses. Users can also use the PocketGuard mobile app to track their recurring bills and detect changes in their spending patterns.



PocketSmith is a personal finance software which lets users see all their bank, credit card and loan accounts in one place and keep track of their spending behavior by categorizing and labeling their transactions. The solution also offers users the ability to see their future bank balances with a budget calendar and what-if scenarios. The app offers bank-level security features.

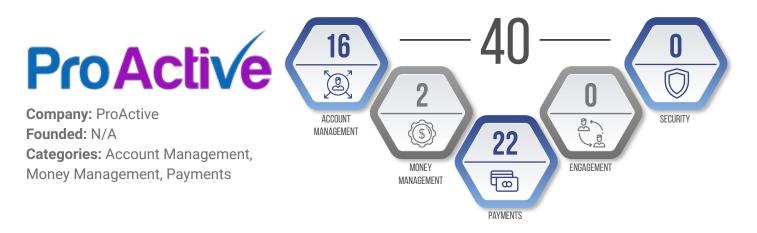


Pockit is an alternative to traditional bank accounts, offering a prepaid card and giving customers cashback deals when they spend in-store or online with leading retail partners. Pockit also offers a mobile app where cardholders can manage and use their money in a safe way, set budgets, save money and pay bills.

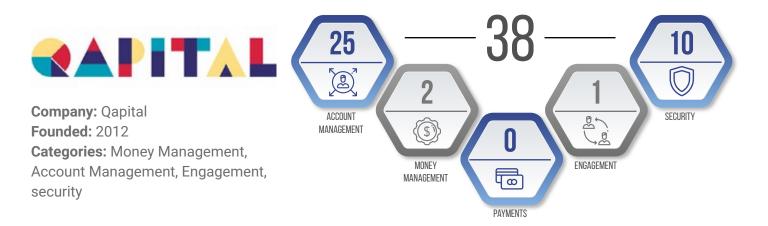


PAYMENTS

Prism Money offers a bill payment service available across different channels. The app shows the user bills close to due and allows them to get a glance at account balances so payment decisions can be made based on financial status. The solution allows payments via credit card, debit card and through the user's bank account. Prism ensures users personal data and sensitive information is stored in an ultra-secure cloud.



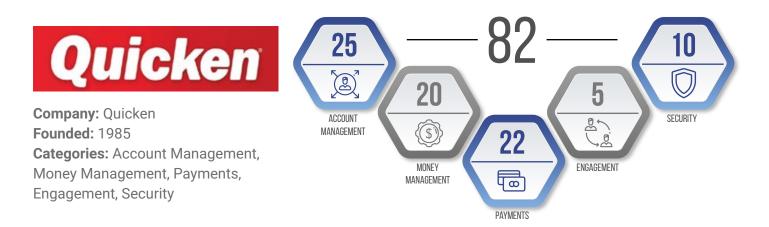
ProActive offers its customers a range of features. Users can see their transactions by using the app almost instantly after the transaction has been made. They can also control their spending using budgeting tools. ProActive supports bill payments and P2P payments.



Qapital develops a personal finance mobile application for Android and iOS. Qapital offers users an interest bearing checking account and a VISA debit card. The app also allows the user to establish saving goals and saving rules that can be customized.



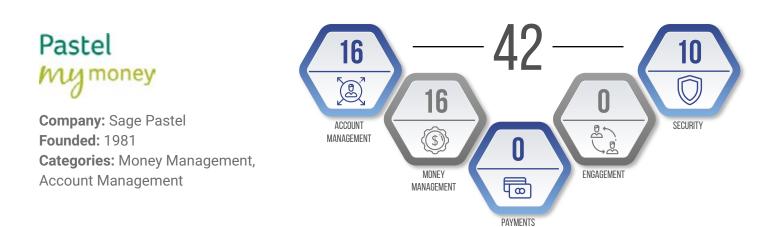
The classic envelope saving system finds its place in the digital era by the hand of Quemulus' saving management app, Money Clouds. Users can create savings objectives and deposit money via the app. Users can also share those objectives with friends and help them reach theirs by contributing money. The app uses top industry standards of 256-bit encryption and PCI Compliant bank services to transfer and store sensitive financial data.



Quicken, owned by H.I.G. Capital, is a personal finance management software which enables users to see, track, and pay their bills, all in one place. Users can also track their purchases and check balances, organize and pay bills, set up realistic budget goals and reduce debts by understanding their spending trends. Quicken offers bank-level security features, receiving encrypted data from their users' financial institutions accounts.



Revolut allows users to send money using an app or via SMS, email, WhatsApp and social media. Users can also see their transaction history and make money transfers to other accounts.



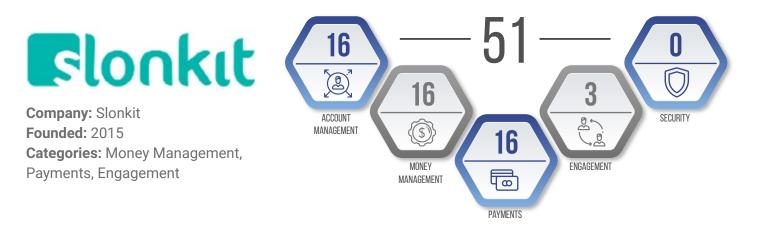
Pastel My Money is an online personal finance management tool powered by Sage Pastel. It provides users with an overview of their spending habits and bank account balances. Users can also set goals and control their budget in order to save money. Pastel My Money uses 128-bit encryption and transmits personal and financial information securely.



SilverWiz is a company which develops smart applications. One of them is MoneyWiz, a money management app that offers a wide range of capabilities including an automatic sync of bank accounts and transactions, budgets and bills in one place, forecasting, and financial reporting. Moreover, MoneyWiz enables users to set bill payment reminders and set transactions to pay automatically. The app secures data with an encrypted connection, as well as options of TouchID and a four-digit PIN code.



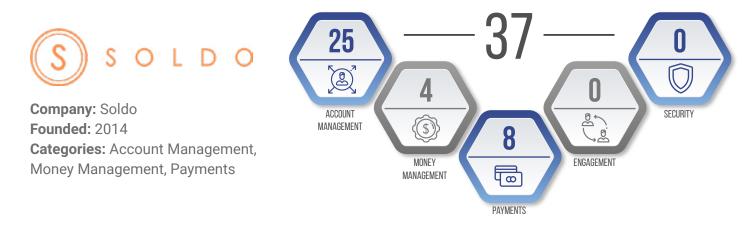
The Simple bank account lets users organize their expenditures by category and gives them insight on their evolution in real-time. It can also help reach budgeting and saving objectives. Users can setup notifications for every transaction and also get notified when a deposit arrives. In addition to receiving a Visa debit card, a Simple account lets users pay bills, transfer and deposit money with a photo deposit tool, and withdraw funds without an ATM fee. Simple meets all industry security standards and offers bank-level features.



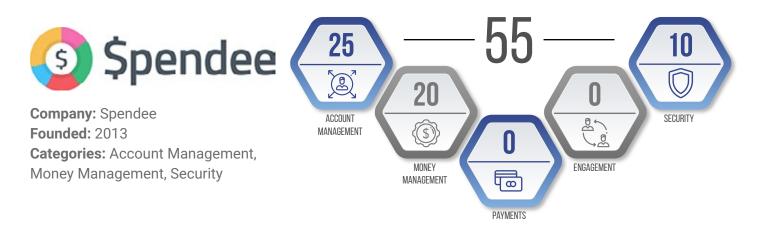
Slonkit is a money management startup that offers users a nance management tool to help them set and track budgets across categories, monitor their expenses, get ranked according to their expenses and compare their scores with friends. It also enables users to load money to their account, send money to friends, and make online or in-store purchases.



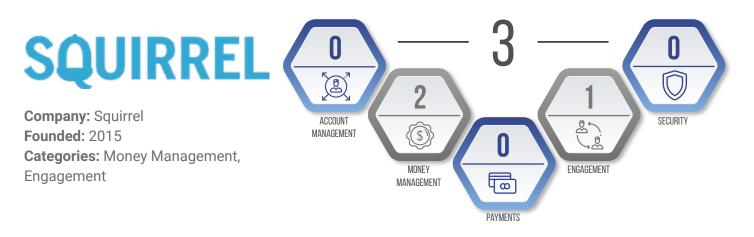
Smile is a fully digital bank offering internet banking, current accounts, mortgages, savings accounts, credit cards and loans. Users can instantly move their money from their current account and savings account, make payments to anyone by setting up a payments list, view their balance and recent transactions, receive weekly balance updates for their current, savings and credit card accounts by text message and set up text alerts to prevent overspending.



Soldo develops finance solutions for personal and business users. The company offers an app-based spending account for families and Mastercard debit cards that offer capabilities such as setting spending rules, instant money transfer between family members and tracking of spending.



Spendee provides users with a data analytics tool for their income and expenses. The app lets users create budgets, multiple wallets and features a traveling mode to add transactions in different currencies.



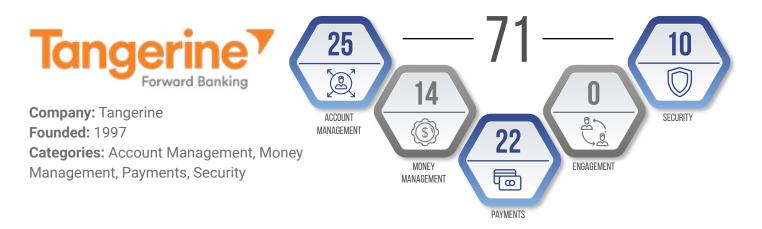
Squirrel is a FinTech startup that focuses on personal financial management solutions. Their app allows users to define goals, share them with friends and connect to their Pinterest account.



Starling Bank, a licensed mobile-only challenger bank, allows its users to open an account and gain financial data insights about it. The company also offers a contactless debit card enabling users to deposit and withdraw money from ATMs.



Tandem is a U.K.-based challenger offering an online retail bank. Its solution includes budgeting and advice, among other features.



Tangerine, an independently operated subisdiariy of Scotiabank, provides personal banking products such as checking and savings accounts, mortgages and mutual funds. It offers online and mobile banking.



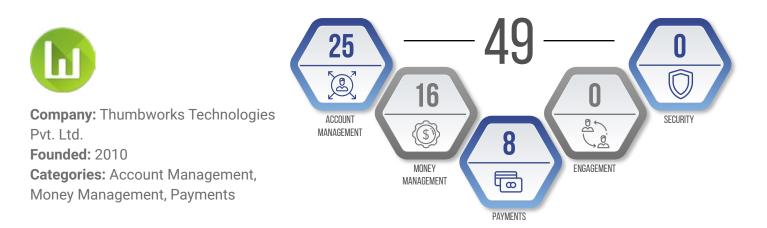
The One Place Capital Limited, trading as Money Dashboard, is an online personal financial management service. Money Dashboard lets users view all their financial accounts in one place. Accounts are refreshed daily, enabling users to be up to date with their current financial position. It provides tools to view incomings and outgoings, enabling members to understand their spending trends and organize their finances more effectively. Moreover, Money Dashboard offers a budget planner to set financial goals. The service offers bank-level security to protect data.



Think Money Group is a financial services company that offers the thinkmoney personal account, a service designed to help customers to manage their finances. Users can control their income and set money aside to pay regular bills and commitments. The platform also enables them to set budgets and plan ahead. Users can also get a Mastercard credit card, earn rewards and can check for offers using the app.



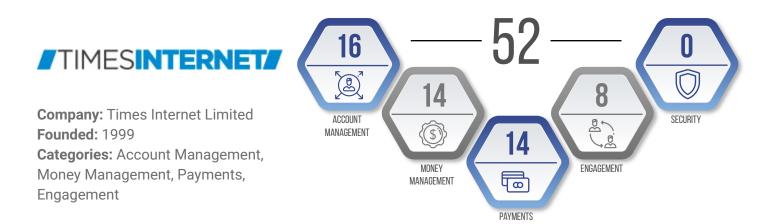
Thomas Cook develops vacation-focused personal finance solutions, including prepaid travel cars, insurance and mobile banking tools. Sumo, the company's mobile banking offering, allows users to hold different currencies, make international payments and save money.



Walnut, developed by Thumbworks Technologies Pvt. Ltd., is a money management tool. It reads text messages from banks and businesses on smartphones and automatically categorizes important information about spending, bills and tickets. It also gives users the ability to: split bills over chat and make real time P2P money transfers to bank accounts; track their credit/debit cards, bank accounts, bills and cash expenses; set reminders for bill payments; and receive graphic analysis periodically in order to be always up to date with their spending.



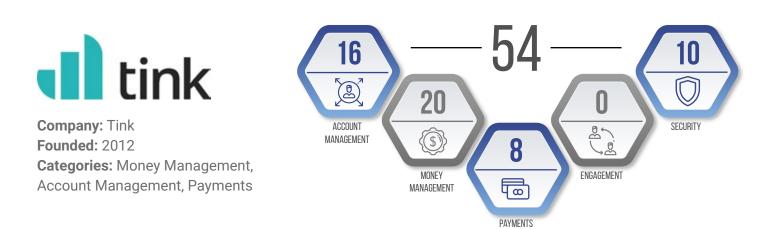
Tiller Money develops digital personal finance solutions. Its solutions are intended to allow users to keep track of their finances by integrating software into their bank accounts and transfering the data into Google Sheets. Users can choose between premade data display templates or create one from their dashboard.



Times Internet Limited is an internet network company. The company's Smartspends app allows users to organize their spending by category (such as travel, restaurants, etc.), manage their expenses and make payments.



Timo is a digital-only bank powered by VP Bank. It provides customers with ease-of-use and fee transparency, and allows them to set saving goals, transfer money and make deposits.



Tink is a FinTech company that has developed a banking app focused on giving the user money management tools. The app automatically categorizes and organizes the users' finances to make it easy to follow their spending over time. Users can create budgets and set saving goals as well as make payments and transfers funds. Tink offers bank-level security features.



Toshl is a mobile finance and budgeting tool that's available on iOS, Windows, and Android. The app allows users to track their daily expenses, plan a budget, and organize their bills by giving the user access to advice, graphs and other financial insights.



Trim is a finance app that uses artificial intelligence (AI). It is designed to cross-check spending and find more affordable subscription programs.



Touch Bank is a digital-first retail banking platform. Its offerings include an all-digital, mobile first-bank, among other solutions.



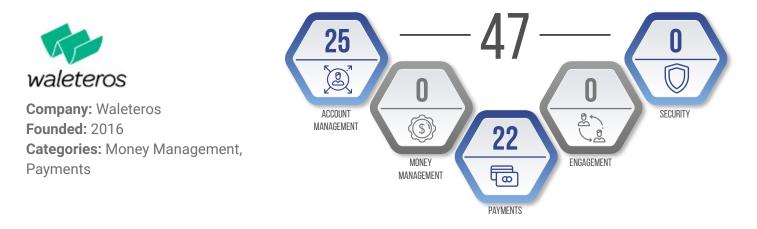
Tuxedo Money Solutions has developed eccount money, an alternative banking solution that allows users to manage their accounts from multiple channels. The solution allows users to view recent transactions and balances, report stolen cards, move money from their eccount to their card, pay bills and perform additional services.



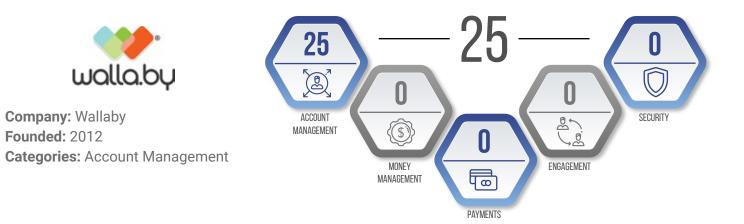
Ualá is a personal finance solutions provider offering access to an app and prepaid Mastercard. Users can make person to-person (P2P) transfers and apply categories to expenses from within the app. It also offers notifications whenever the card is used.



Wala provides a digital bank account that offers users a set of financial tools, including a dashboard that highlights where money is spent, the ability to send P2P payments and a timeline that enables users to keep track of their spending activity.



Waleteros is a finance services provider that offers users a mobile banking account associated with a prepaid Visa debit card. The app's functionalities include cashing checks, money transfers, bill payments and transaction alerts.



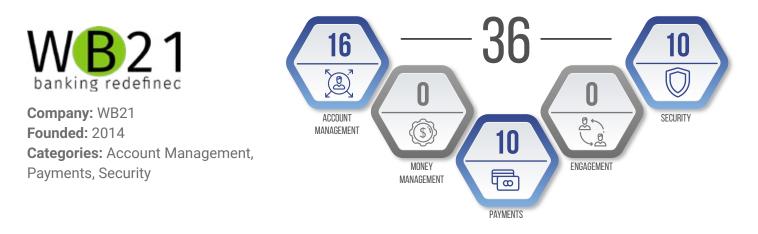
Wallaby assists users in optimizing credit card usage, allowing them to access their card's rewards, limits and due dates, among others. It is available on iOS and Android, and users also have access to Wallaby's WalletBoost web app.



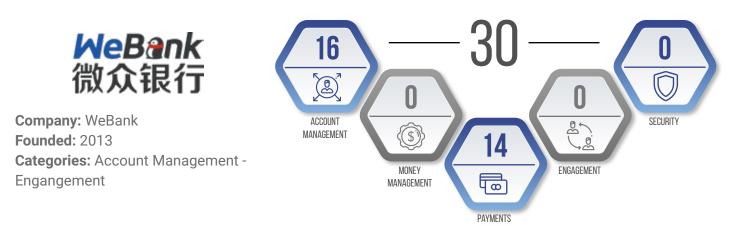
Wally is a money management app available for Android and iOS. Wally enables users to track their expenses by category and venue, establish saving goals and compare their own spending patterns with similar users.



Wave provides a cloud-based integrated suite of business tools such as accounting, invoicing and payroll. The company's Wave Personal software is designed to help users organize their expenses and investments according to their incomes. Wave Personal enables users to connect their bank or credit card accounts to their Wave account, without having to enter receipts manually. Wave Personal is intended to help users track investments in real time, set budgets and save money.



WB21 is a digital bank that offers real-time account opening and cross border payments. Users can link their Mastercard Debit Card to WB21's mobile app in order to make POS purchases with NFC technology. They can also manage and monitor their accounts in real-time, send and receive payments instantly and track their money transfers status.



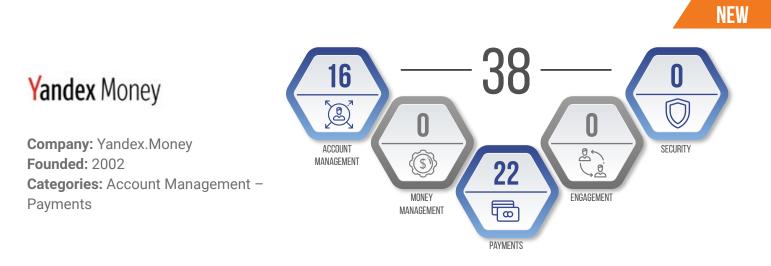
WeBank is a joint venture led by Chinese gaming and social network group Tencent Holdings. Its banking app is designed to work with instant messaging and social networking app WeChat and offers a full-service digital bank.



Wela gives users a holistic view of their financial situations – including investments, cash, credit card debt, student loans and real estate – from one application.



Wilobank is an Argentinian online bank that operates via a mobile app and with the technological power of Red Link, an Argentinian processing services firm. It is currently only available in the Google Play store.



Yandex.Money is a joint venture of the search engine Yandex and Russia's Sberbank. The collaboration enables Yandex. Money to offer users access to Sberbank's infrastructure and various services, including digital wallets, ATMs, bank terminals and online banking resources.



You Need A Budget is an app that helps users work toward a savings goal. The software enables them to import their bank account information and create savings categories, where they set income goals. The system helps users gain awareness about where their money is going, whether it be toward a savings goal or to bill payments, and enables users to share this information with others.



Designed by ING, Yolt is a money management mobile app which helps users to stay on top of their money by presenting it in different categories and helping them to save money to improve their spending habits. Yolt combines the user's banking and credit card details across different institutions enabling users to see all of their transactions together and also how much money they have left in their account.



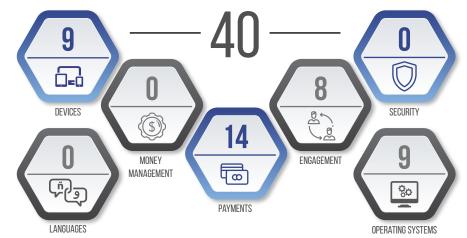
Zazu provides financial solutions for unbanked populations. Its offering is compliant with the National Payment Systems Act, displays transactions and expenses in real time and provides notifications to users.



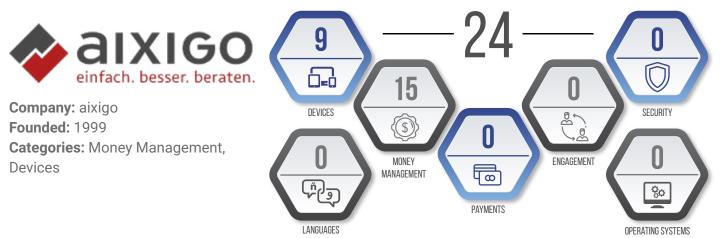
Zero's mobile banking platform offers a card that acts like a debit card and earns credit card rewards. Customers can make deposits or spend money on their Zerocard, and their transaction activity will automatically appear on their account.



**Company:** Active Intelligence **Founded:** 2016 **Categories:** Payments, Engagement, Operating System, Devices



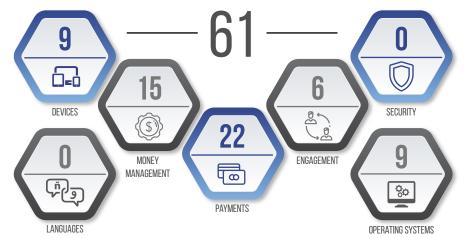
Active Intelligence is a finance technology platform that provides banks, financial institutions and wealth managers with customer engagement tools. The platform enables banks to use chatbots to offer their services and allow users to get balances, view transactions, make payments, get financial advices, among other features.



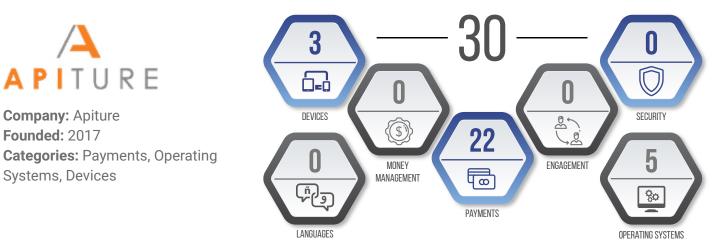
aixigo develops consulting software for banks, insurance companies and financial service providers. Its personal finance management solution offers users an overview of proprietary and non-banking accounts, securities accounts and assets, as well as the complete data history.



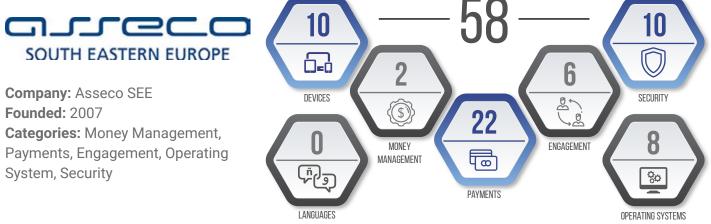
**Company:** Alkami Technology **Founded:** 2009 **Categories:** Money Management, Payments, Engagement, Operating Systems, Devices



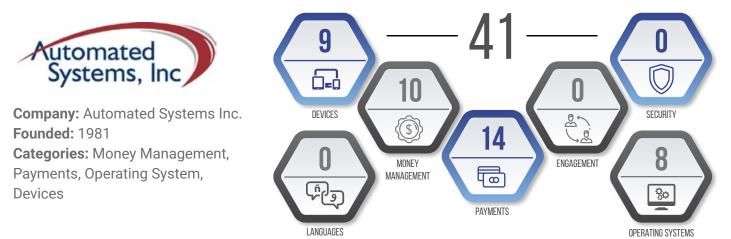
Alkami offers a digital banking solution that works to improve financial institutions' online and mobile channels. Users can monitor their account history, transfer funds and pay bills. The software also includes mobile deposit capabilities as well as configurable alerts. Users can view their accounts with recent and upcoming activity, as well as receive financial tips, relevant news and promotional alerts. Alkami's money management tools help users to save money by enabling them to track their transactions and use financial analysis capabilities.



Apiture is an open application program interface (API) banking platform with product features including spendable balance, mobile deposit and bill pay. Users can originate ACH and wire transfers from the platform, as well as check their account balances.



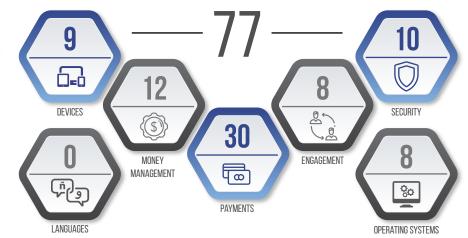
Asseco SEE provides ICT solutions for various industry verticals including the financial sector, payment sector, public administration and telecoms.



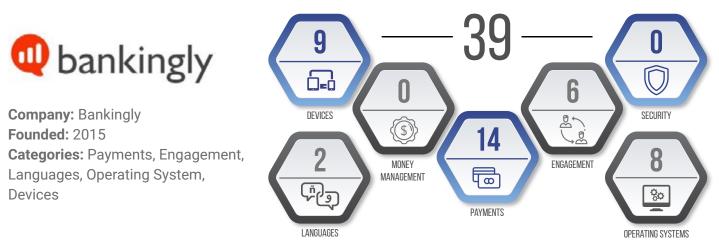
Automated Systems Inc. is a digital banking solutions developer. They provide clients with online, mobile and tablet banking, which provide tools such as transaction categorization, bill payments, account history access and real-time transaction information.

### 🔁 BACKBASE

**Company:** Backbase **Founded:** 2003 **Categories:** Money Management, Payments, Engagement, Operating Systems, Devices, Security



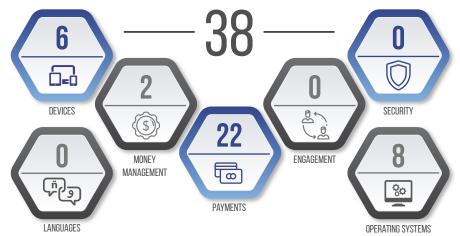
Backbase is a digital banking software developer that offers an out-of-the box omnichannel Digital Banking Platform. The platform comes with a wide range of apps including: login, two-factor-authentication, account overview, transaction details, PFM, bill-pay, transfers, P2P payments, easy payments via email/web forms, message center, address book, and social integration.



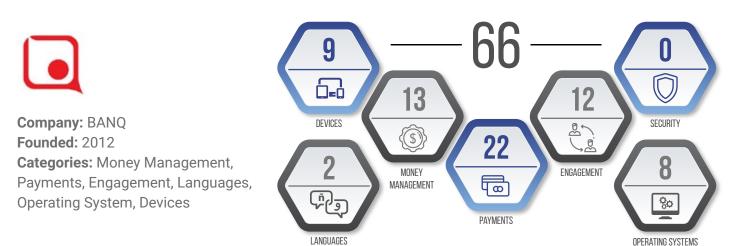
Bankingly provides electronic channel solutions for banks. Its products include mobile and online banking as well as social media banking, which allows users to connect with financial institutions through Facebook or conversational apps such as Twitter, Skype or Telegram.

# Bankjoy

**Company:** Bankjoy **Founded:** 2014 **Categories:** Money Management, Payments, Operating Systems, Devices



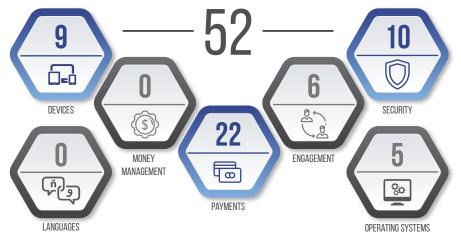
Bankjoy builds mobile banking systems for banks and credit unions. It features photo check deposit, lost/stolen card blocking, travel notifications, P2P and bill payments, among other features.



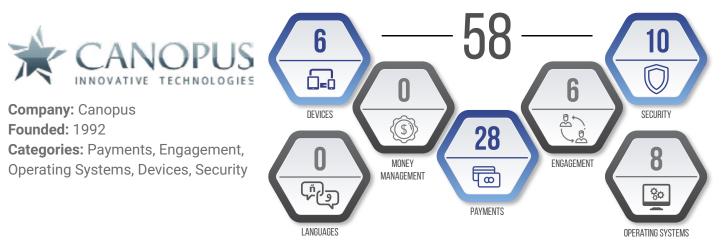
BANQ specializes in multi-platform software solutions for the banking and finance industries. The company's solutions include traditional internet and mobile banking features, CRM, personal finance tools and payment capabilities.



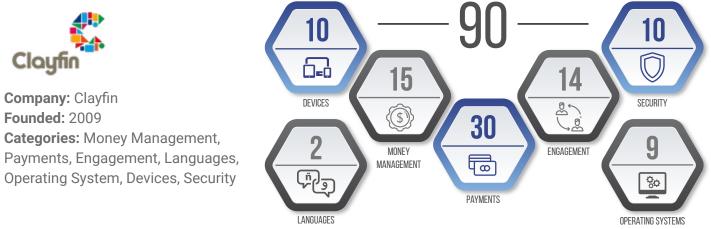
**Company:** Bottomline Technologies **Founded:** 1989 **Categories:** Payments, Operating Systems, Devices, Security



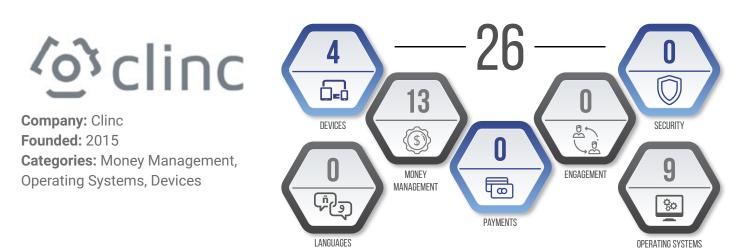
Bottomline Technologies provides corporations, financial institutions and banks worldwide with a set of cloud-based solutions for digital banking, fraud prevention, payment, financial documents, insurance and healthcare information. It also helps prevent fraud and reduce risk across banking channels by using behavioral analytics and pre-configured rules to generate alerts.



Canopus Innovative Technologies develops financial services industry software solutions for banks, payment institutions and e-money issuers as well as corporate treasuries and holdings. Between their main offers is E-pay Suite, an end-to-end software solution which provides solutions for the clients and their users such as support of various types of payments including bill payments, bank wire, online purchases and money transfers. Canopus solutions fully meet security requirements for modern financial software systems both at the level of the middle-office and the client's one.



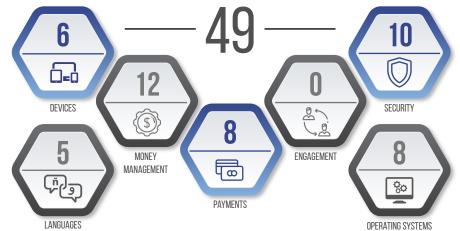
Clayfin provides omnichannel digital banking solutions intended to improve customers' experiences at client banks.



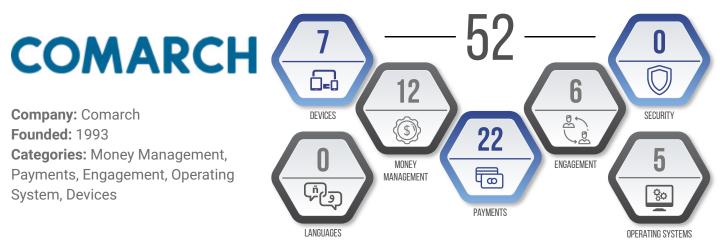
Clinc develops an AI platform for financial service companies. Clinc offers an AI-based retail banking and personal finance management solution that allows users to access spending advices and information on balance and spending using voice commands.



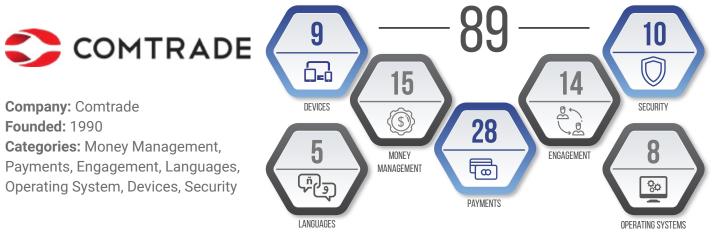
**Company:** CoCoNet **Founded:** 1984 **Categories:** Money Management, Operating Systems, Devices, Payments



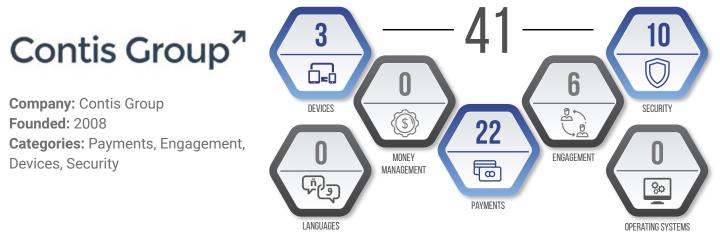
CoCoNet provides a payment and cash management solution to offer corporate customers a central, domestic and international banking access channel with a convenient and fully responsive dashboard. It supports multiple international standards and formats, including the Single Euro Payment Area (SEPA), Electronic Banking Internet Communication Standard (EBICS), Payment Services Directive II (PSD2) and financial messaging service SWIFT.



Comarch is a provider of IT business solutions, serving several industries, ranging from banking, capital markets and insurance to telecommunications, airlines and travel, health care and urban services.



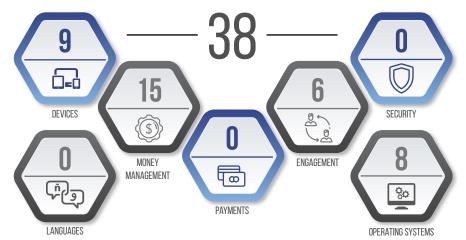
Comtrade develops digital banking solutions that feature personal finance management tools (including budgeting, spending reports and charts and transaction categorization), P2P, bill payments and in-app purchases. It also offers customer engagement capabilities such as personalized offers, loyalty programs and social media integration.



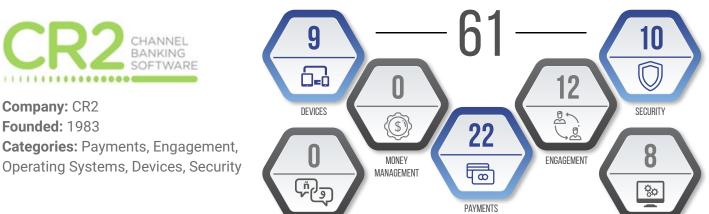
Contis Group is an alternative payments and banking solutions provider that focuses on nancial inclusion, travel and foreign exchange, payroll, and gift and loyalty. Its mobile payments solution processes P2P payments and offers transactional alerts via SMS. It also offers the ability to access to account information, pay bills online and transfer funds. Contis Group is PCI-compliant.



**Company:** Contovista **Founded:** 1999 **Categories:** Money Management, Engagement, Operating Systems, Devices



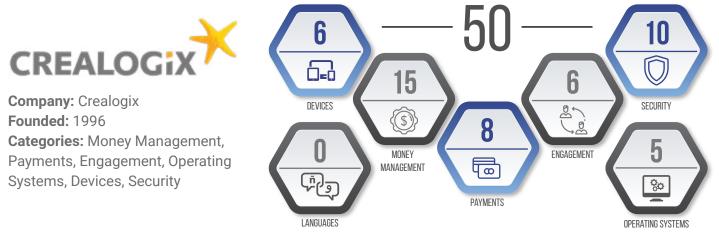
Contovista is a digital banking software company the provides Big Data analytics, business intelligence and visualization of financial data. The company's PFM solution offers automatic transaction categorization, enabling customers to analyze their spending habits in real time.



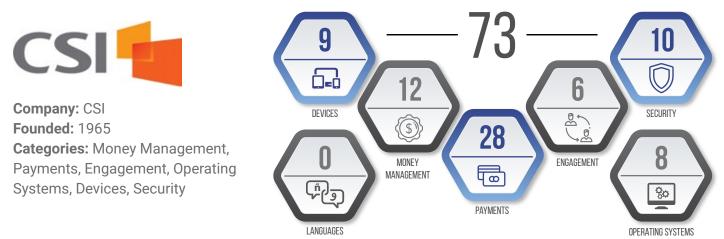
LANGUAGES

CR2 is the developer behind the omnichannel retail banking platform BankWorld. By using BankWorld, users can get a view of all accounts from the mobile and online platform, and use it for making P2P or bill payments, to locate ATMs and to activate or deactivate cards when they are not being used. CR2 helps banks manage and use customer data, enabling sophisticated analytics and segmentation, and the delivery of tailored offers. BankWorld Mobile App includes innovative security features including one time passwords and multiple authentications.

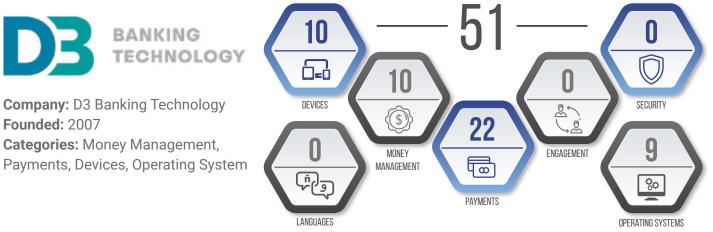
OPERATING SYSTEMS



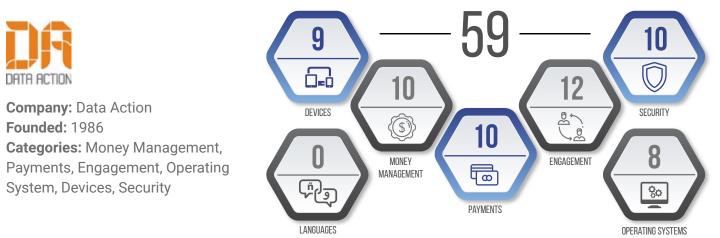
Crealogix is a software company that provides banks and financial institutions with financial technology solutions. The mobile banking system enables customers to access account information and carry out transactions including payments, e-invoices and stock exchange orders. Users are able to securely login by using fingerprint recognition. Crealogix also offers a personal financial management module where users can save money and track their expenses, get graphical analyses, categorizations and personal dashboard support for an overview of their finances.



CSI is a financial technology provider which offers banks and other industries most of the technological core competencies they need. CSI provides banks with a suite of integrated mobile and internet banking solutions that help them connect with customers, employees and board members through innovative technology channels. CSI digital banking features include: access transfers, payments, external transfers, external payments, bill pay and P2P, personal financial management tools and more. The firm also offers bank fraud detection software for mobile banking, Internet banking and business banking.



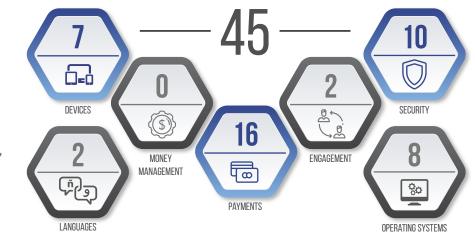
D3 Banking Technology develops software-as-a-service omnichannel solutions aimed at banks and credit unions. The company offers customer analytics tools intended to enable financial institutions to personalize their product and service offering for each unique customer. The software enables users to make payments, complete transactions, view balances and reach financial information insights on their budget and financial position.



Data Action is a digital banking and core banking solutions developer. The company's digital banking solutions offers a set of different features including personal financial management tools, POS purchases and marketing capabilities.



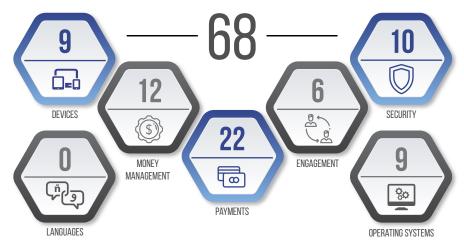
**Company:** Digiliti Money **Founded:** 2010 **Categories:** Payments, Engagement, Languages, Operating Systems, Devices, Security



Digiliti Money is a financial services technology company specializing in commercial and consumer remote deposit capture and mobile money solutions for banks, credit unions and alternative financial services providers.

## 

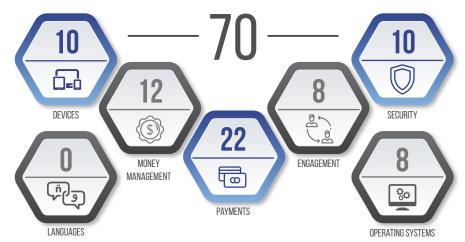
**Company:** Digital Insight **Founded:** 1995 **Categories:** Money Management, Payments, Engagement, Operating Systems, Devices, Security



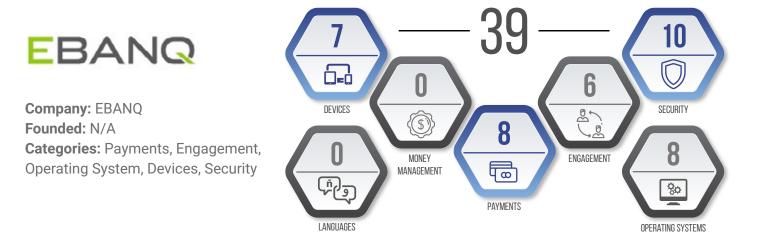
Digital Insight provides an array of different digital banking solutions, including tools that cover areas like payments and money management, such as bill payment capabilities, expense categorization and no-cost marketing support. Its Mobile Banking Apps are fully secure using industry standard technologies (SSL) and security certificates with 128-bit encrypted communication.



**Company:** ebankit **Founded:** 2014 **Categories:** Money Management, Payments, Engagement, Operation Systems, Devices, Security



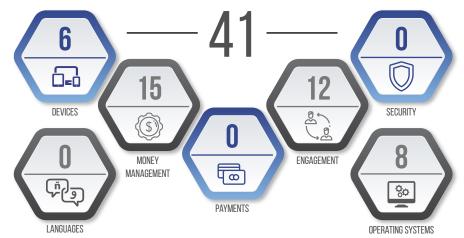
ebankit is an omnichannel banking software company which provides innovative technologies for the banking industry. ebankit's banking solutions include Personal Financial Management tools such as budgeting and saving, allowing bank customers to control their finances; and social banking apps for swift transactions between clients of the same or different banks in a social network format and where the bank can share ongoing campaigns offers. The company also offers payments and cardless cash withdrawals. The Internet Banking Channel makes all aspects of security such as authentication via multichannel PIN, SMS alerts and more.



EBANQ develops a banking platform for online and mobile channels and that is customizable to suit a client's logo, icons and colors. The platform offers such features as wire and P2P transfers and the display of balance and transaction history.



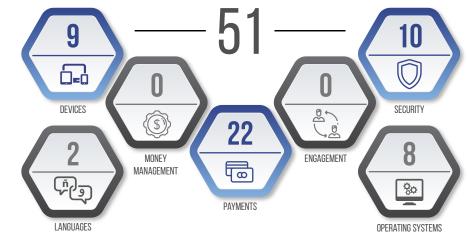
**Company:** Efigence **Founded:** 1999 **Categories:** Money Management, Engagement, Operation Systems, Devices



Efigence is a developer of digital banking technology. The company's digital banking platform, Efi4, is PSD2-ready and provides a set of personal finance management solutions such as spending categorization, budgeting and saving tools.



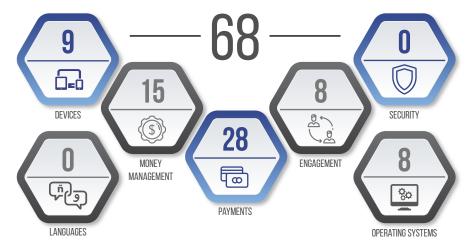
**Company:** eKassir **Founded:** 2003 **Categories:** Payments, Languages, Operating System, Devices, Security



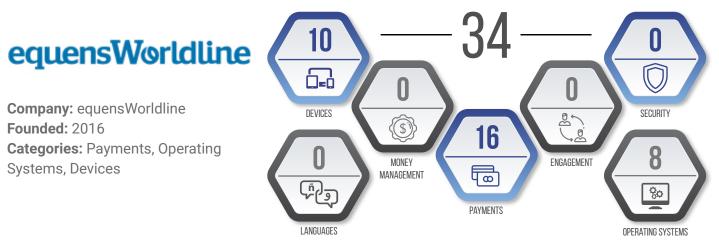
eKassir is a developer of software for payment systems, self-service kiosks, and ATMs. The company's digital banking platform allows financial companies to offer customer services thorugh channels like mobile and internet as well as through a chatbot that works on Telegram.



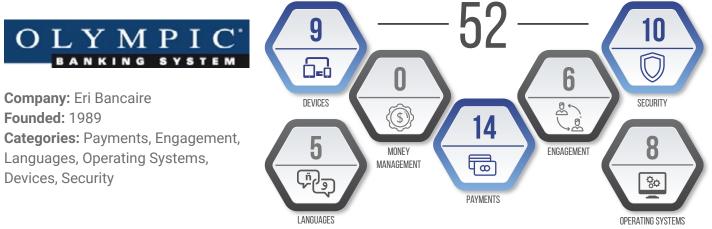
**Company:** Envestnet - Yodlee **Founded:** 1999 **Categories:** Money Management, Payments, Engagement, Operating Systems, Devices



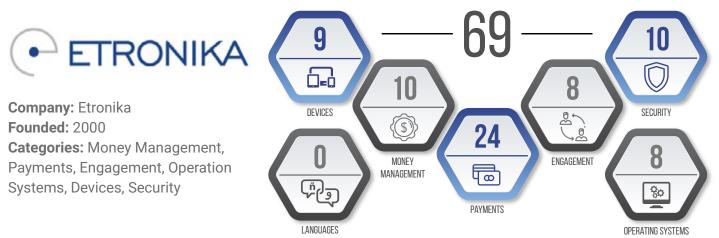
Yodlee offers a different menu of product going from its own developing platform to solutions and services. The Yodlee platform allows for the construction of banking apps based on a big data engine while the company's ready solutions include mobile applications and personal financial management tools like manage expenses, set a budget, save for personal goals, view investments, calculate net worth, and improve overall financial wellness. Yodlee also provides payments functionalities and enables users to transfer funds from accounts, set bill reminders and pay bills automatically, make ecommerce payments and more.



equensWorldline is a payment services provider. The company's solutions cover issuing, acquiring, payments and digital banking, including open banking services, mobile banking and a digital banking platform.



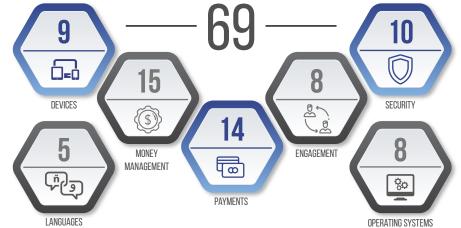
Eri Bancaire has designed and developed OLYMPIC Banking System, an integrated, real-time core banking and wealth management software package. The application offers a range of capabilities and covers multi-language requirements. Users can use this platform to make bill payments, get real-time cash balance updates, get account reports and more.



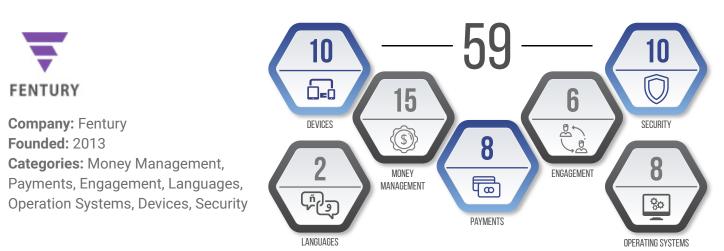
Etronika is an IT solutions developer providing platforms for the retail, finance and banking industry. It offers Bankatron, a platform that enables financial institutions to offer clients a personalized e-banking experience across all channels and devices. Etronika has also developed a mobile banking solution that allows customers to check balances, view account statements and make payments, among other features.

# eWise

**Company:** eWise **Founded:** 2000 **Categories:** Money Management, Payments, Engagement, Languages, Operating System, Devices, Security



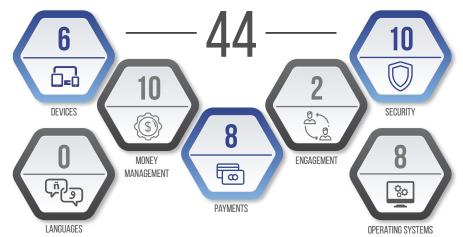
eWise helps financial institution and banking customers to bring together all their financial accounts in a single screen. The company's Account Aggregation and Money Manager solutions aim to offer users tools to better manage their money and reach their financial goals.



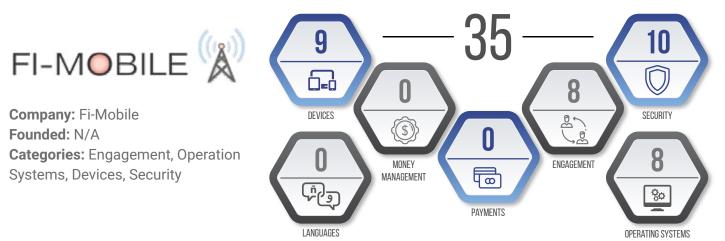
Fentury is a personal financial manager solutions developer, serving individual customers through its app and banks with its white label solution. The company's products include transaction categorization, saving goals and financial planning.



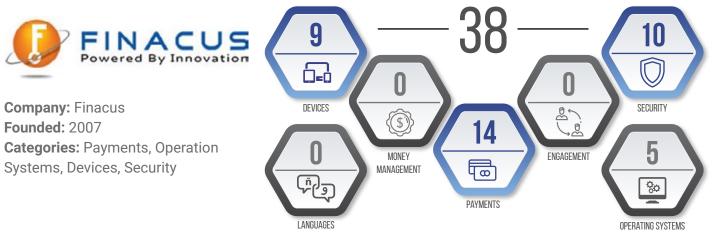
**Company:** Fidor Solutions **Founded:** 2007 **Categories:** Money Management, Payments, Engagement, Operating System, Devices, Security



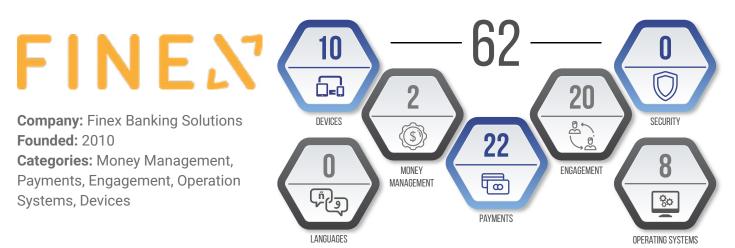
Fidor Solutions is a digital banking solutions provider and the creator of Fidor Bank. It offers Fidor OS, a digital banking platform using open application program interfaces (APIs) and providing features like person-to-person (P2P) payments, instant ACH payments and loyalty tools, among others.



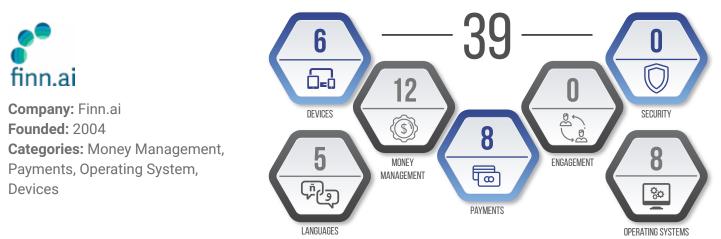
Fi-Mobile develops mobile solutions for credit unions and banks. The company's mobile banking solution presents a set of different features including account opening, remote check deposit, loan origination and balance checking.



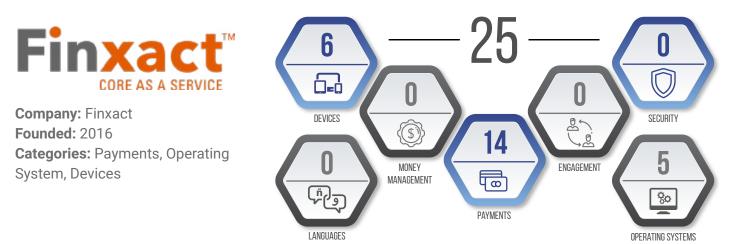
Finacus Solutions is a tehcnology developer for the banking & finance sectors. Finacus products cover a range of needs that goes from core banking and anti-money laundering solutions to mobile, tablet, social media and internet banking.



Finex Banking Solutions provides banks with a ready-to-go solution that fully supports internet, tablet and mobile banking, with an omnichannel experience. Finex Banking Solutions enables banks to provide personal finance management tools, reward customers with loyalty points and other benefits, as well as integrate social media capabilities within online and mobile banking, bill payment and multiple types of transfers and more.



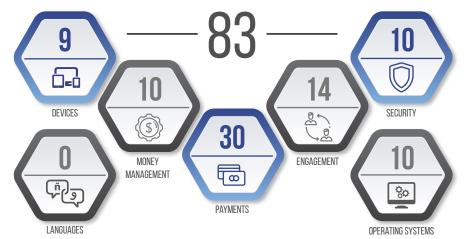
Finn.ai offers digital banking solutions through products designed to track budgets, receive alerts and monitor spending. It also provides a digital and mobile chat platform.



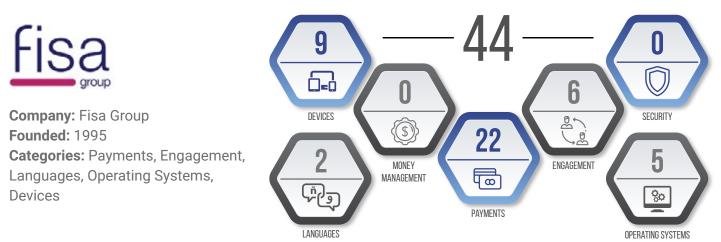
Finxact develops digital banking software providing functions such as real-time access to transactions and funds, and also enables customers to bank via web or mobile. Client banks can access customer relationship management tools, digital communication management and bill payment.

Fis

**Company:** FIS **Founded:** 1968 **Categories:** Money Management, Payments, Engagement, Operating Systems, Devices, Security



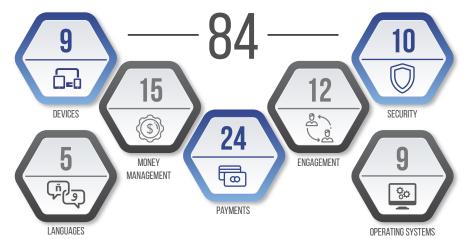
FIS offers digital omnichannel solutions with a portfolio of features that include P2P and bill payments, purchases at the POS and online; personal financial management tools, customer engagement capabilities such as in-app space for marketing, cross-selling and promotions; rewards/loyalty programs and social media integration, which enables FI to address compliance, marketing and resourcing via Facebook, Google+, LinkedIn, Twitter, YouTube and other social media platforms. FIS's digital solutions offer multi-factor authentication, SSL encryption, device identification and timeout, user entitlements and passcode.



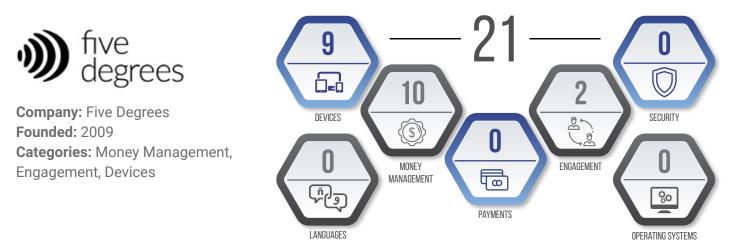
Fisa Group serves financial services industry clients. Its Omnia Business Platform offers capabilities such as local, international and bill payments and is accessible via mobile.

# fiserv.

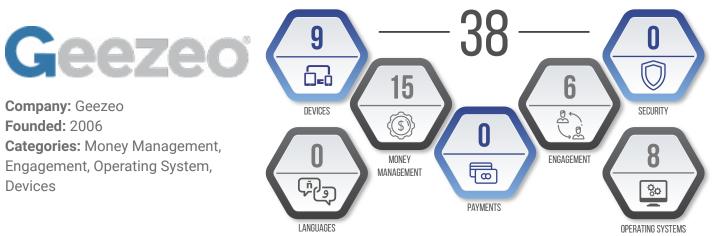
**Company:** Fiserv **Founded:** 1984 **Categories:** Money Management, Payments, Engagement, Languages, Operating Systems, Devices, Security



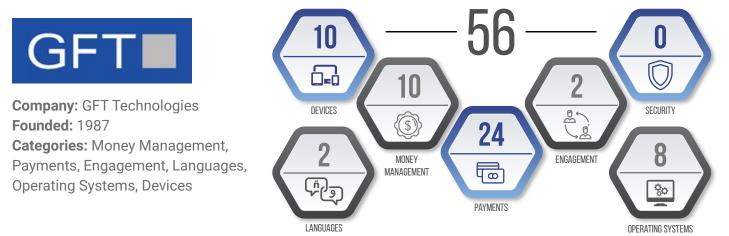
Fiserv provides financial services technology and services innovation, including solutions for mobile and online banking, payments, risk management, data analytics and core account processing. The banking solution offers personal finance and money management capabilities such as budgeting, transaction categorization and financial analysis dashboard where users can get a snapshot of their net worth, income, expenses and savings goals. In addition, the company provides loyalty and reward programs and many payment capabilities including P2P, bill pay and payments at the POS. Fiserv also delivers real-time cybersecurity defense capabilities and a multi-factor user authentication tool.



Five Degrees is a developer of financial technologies specially designed for retail and private banks. Its products include Matrix, a digital banking platform that offers fully automated banking services that enable banks to operate at today's digital banking standards and interact in the real, virtual (mobile, e-banking) and social (wallets, Facebook) space.



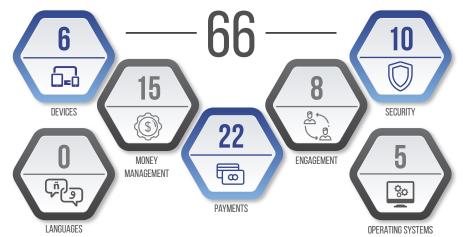
Geezeo is a software services provider for banks and credit unions. The company, among other solutions, offers an API that allows its clients to offer personal financial management solutions like budgeting and saving goals.



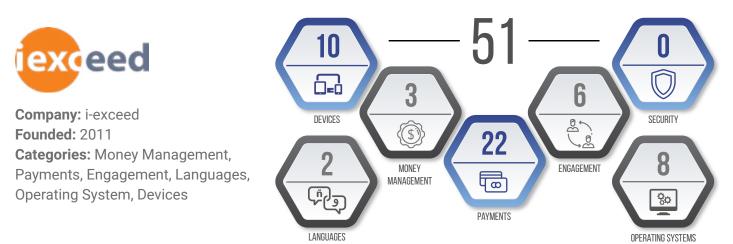
GFT Technologies provides IT solutions to the financial industry, enabling banks and financial institutions to modernize their infrastructure and offer their customers innovative services. Among other features, GFT digital solutions enable automatic account optimization and context based account management, money management, smart financial management and mobile payments.

## 89 halcom

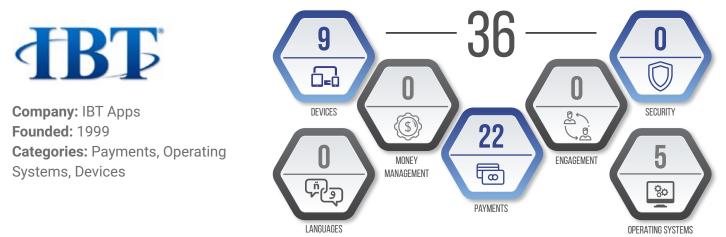
**Company:** Halcom **Founded:** 1992 **Categories:** Money Management, Payments, Engagement, Operating System, Devices, Security



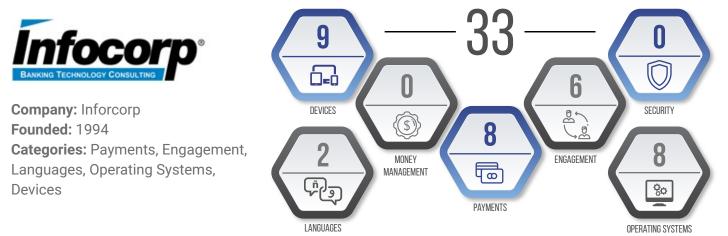
Halcom is an European financial technology vendor catering to central and commercial banks. The comapany's digital banking suite is a single-engine platform that allows individual deployment of online, mobile and tablet solutions.



i-exceed is an IT products and services company. Appzillon is i-exceed's flagship product offering and consists of a Unified Application Development Suite, a development platform that allows developers to create apps for various smart devices.



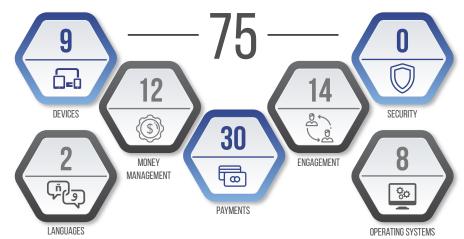
IBT Apps is a financial services software firm that serves the banking and credit union industries. The company's banking solution products include banking, bill payments, mobile capture and online transfers.



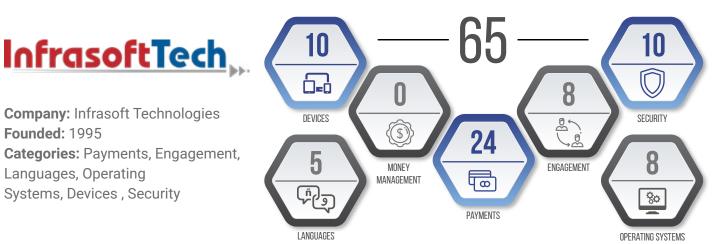
Technology company Inforcorp's main division is IC Banking, which works with Latin American financial institutions offering an omnichannel banking platform, allowing banks to develop better user experiences for customers who use their website and mobile site, social media, and branches.

Infosys

**Company:** Infosys **Founded:** 1981 **Categories:** Money Management, Payments, Engagement, Languages, Operating Systems, Devices



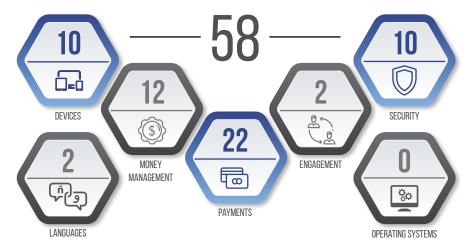
Infosys is a technology solutions developer offering products covering not only digital banking solutions, but also commerce functionalities like marketing and digital commerce. The company develops Finacle, a digital banking product that covers different industry's needs and offers a broad range of features including: savings budget planner, fund transfers, bill payment, online purchases, touch ID based biometric authentication, augmented reality, personalized onboarding through QR codes, and mobile remote deposit capture. Finacle also offers PFM customer engagement features including personalized offers and social integration.



Infrasoft Technologies provides digital solutions to nancial institutions. Its mobile banking solution enables customers use their smartphones to manage accounts, transfer funds, pay bills and access analytical dashboards. The solution features standard security capabilities including data encryption, session key protection, multifactor authentication and tokenization.



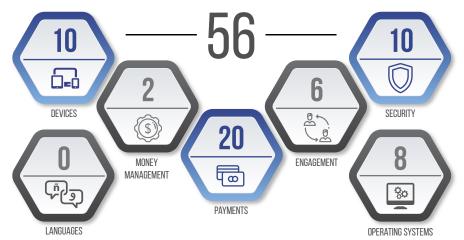
**Company:** Innofis **Founded:** 2012 **Categories:** Money Management, Payments, Engagement, Languages, Devices, Security



Innofis is a global provider of multichannel digital banking platforms. Innofis allows banks to provide customers with a wide range of services, from transactional services for payments, transfers, cards and accounts, to account opening, loan requests and investment management. In addition, it enables banks to collect information through its social media integration and build personal relationships with customers by offering an experience based on behavioral patterns. Innofis also offers personal finance management tools allowing customers to manage their financials and forecast effectively. The company offers 2nd factor authentication and authorization process based on user roles and user access rights.

#### C intelligent environments Interact in the Digital World

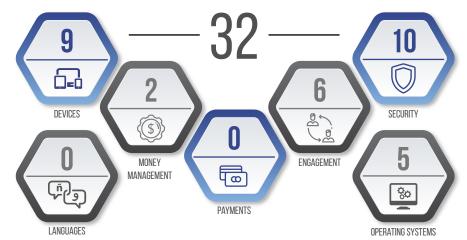
**Company:** Intelligent Environments **Founded:** 1985 **Categories:** Money Management, Payments, Engagement, Operating Systems, Devices, Security



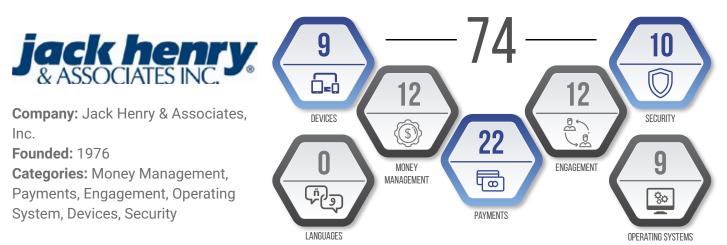
Intelligent Environments is a company focused on the development of online and mobile financial solutions. "Interact," the company's banking platform, includes different capabilities going from the processing of the acquisition of new products to the completion of P2P and bill payments. The firm also develops tools allowing for saving and debt planning or payments cards data entry facilitation between others. Interact is PCI-DSS Level 1 certified.



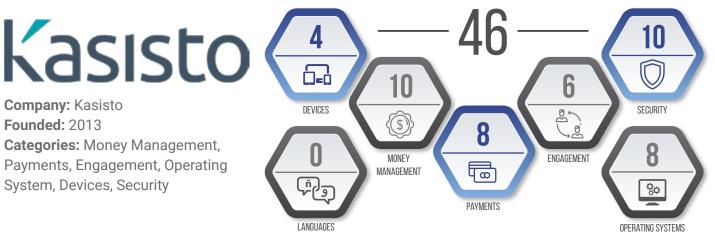
**Company:** iQuantify **Founded:** 2009 **Categories:** Money Management, Engagement, Operating Systems, Devices, Security



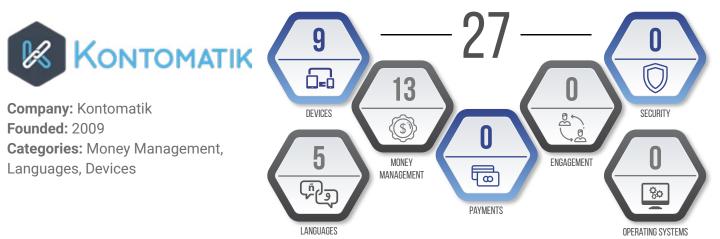
iQuantifi develops an algorithm-based financial planner. The solution offers tools such as scenario planning and investment advice. The software also allows for importance ordering of goals and helps in the identification of budget areas where money can be saved to accomplish their financial goals. iQuantifi follows the same standards as banks and use 128-bit secure socket layer technology (SSL) and SHA-256 encryption, so sensitive information is fully protected.



Jack Henry & Associates integrates computer systems for in-house and outsourced data processing to commercial banks, credit unions and other financial institutions, primarly those located in the U.S. It also provides complementary products and services such as internet banking and retail delivery solutions.

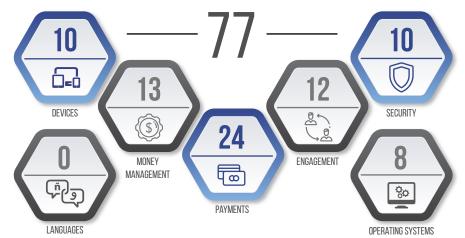


Kasisto develops Kai, a conversational AI platform. KAI Banking enables financial institutions to add virtual assistants and smart bots to their mobile apps and leading messaging platforms, including Facebook Messenger, Slack and classic SMS.

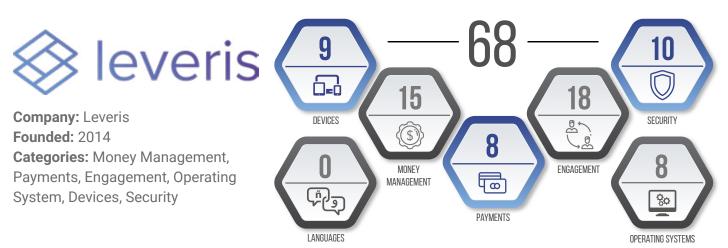


Kontomatik is a provider of banking API for internet banking and personal finance management and FinTech applications. The company offers banks and financial institutions data aggregation tools, which are intended to enable them to offer their customers more efficient internet banking systems. kony 🏷

**Company:** Kony **Founded:** 2007 **Categories:** Money Management, Payments, Engagement, Operating Systems, Devices, Security



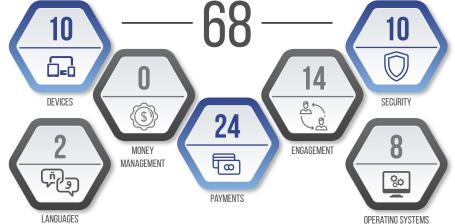
Kony is a cloud-based mobile application development platform that enables banks to deliver a unified, personalized and omnichannel customer experience. Banks can offer customers a personal financial solution to perform all essential banking functions: check account balances and details for all product types including checking, savings, mortgage, credit cards, and brokerage; view and search transactions; set up and schedule transfers, bill payments, and person-to-person (P2P) transfers and more. Kony also allows banks to build personalized campaigns and promote merchant rewards and offers. The app supports SSL encryption and enables two-factor authentication using challenge/response system (with hardware or software tokens).



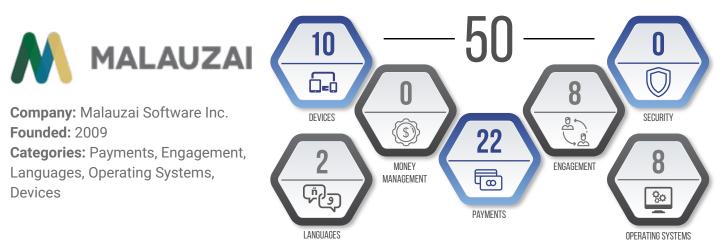
Leveris is a technology company that builds a full-service, modular, banking-as-a-service solution. Their platform has two products integrated into it: a full-service end-to-end digital retail banking and a full-spectrum lending solution.



**Company:** MagiClick **Founded:** 1996 **Categories:** Payments, Engagement, Languages, Devices, Security



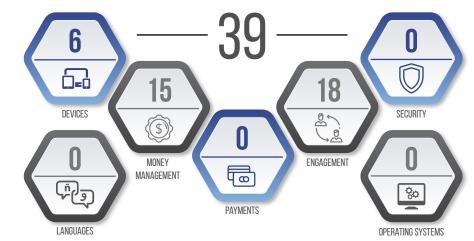
MagiClick provides multi-platform UX/UI design, development and marketing capabilities. Between their solutions is the digital banking platform and a gamification platform for adding gaming mechanics to users actions.



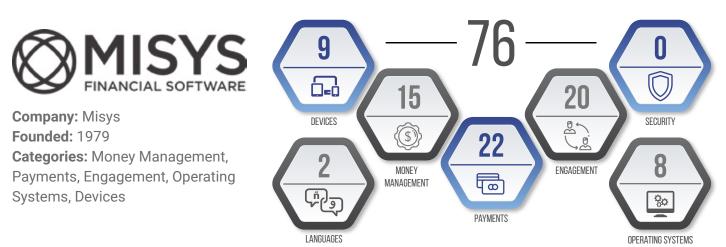
Malauzai Software develops banking solutions for financial institutions, delivering mobile and internet applications intended to enhance the customer experience across all channels (mobile, tablet, desktop and wearables).



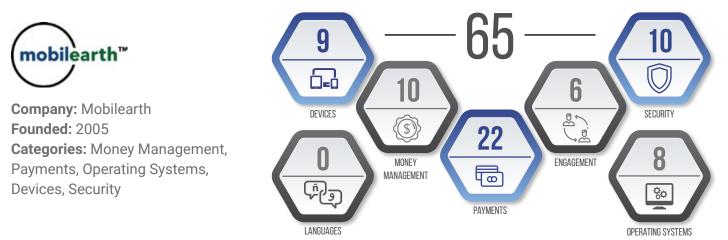
**Company:** Meniga **Founded:** 2009 **Categories:** Money Management, Engagement, Devices



Meniga develops financial technology solutions. The company offers a personal finance manager that allows the users to follow their activity from different accounts, get cash flow forecasts, categorize expenses and establish saving goals. Other solutions include marketing tools like the design of campaigns based on consumer behavior as wells as consumer data analytics capabilities, enabling financial institutions to deliver targeted offers and rewards.



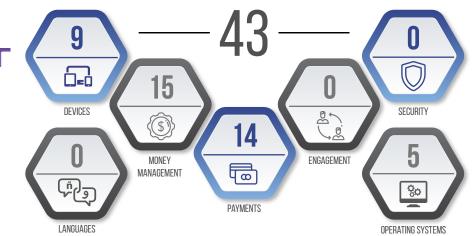
Misys is a financial services company that develops products covering core banking functionalities as well as capital, investment and risk services. FusionBanking, Misys´ digital banking solution, enables financial institutions to offer their clients a complete suite of retail banking services such as Personal Financial Management tools like automated transactions categorization, spending analysis, budgeting and saving goals, online and mobile account management; payments and transaction services; and digital sales capabilities including campaign management, targeted offers, CRM, social media integration, rewards/loyalty programs, innovative advertisement and analytics.



Mobilearth develops an omnichannel mobile banking product designed for financial institutions and their customers. It offers different features to help the user manage their digital bank account such as money transfers, bill payments, P2P transactions as well as personal financial management capabilities like expense tracking and budgeting. Mobilearth offers bank-level security standards, data encryption and multi-factor authentication.



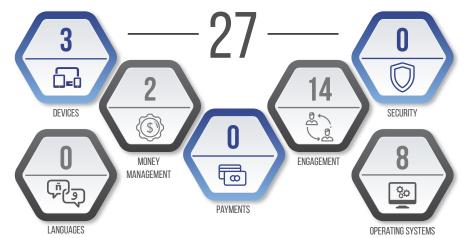
**Company:** Moonraft **Founded:** 2008 **Categories:** Money Management, Payments, Operating Systems, Devices



Moonraft is an innovation and design firm. The company recently launched Catamera, which offers clients a library of web components to help banks develop and release innovations to keep up with consumer expectations.



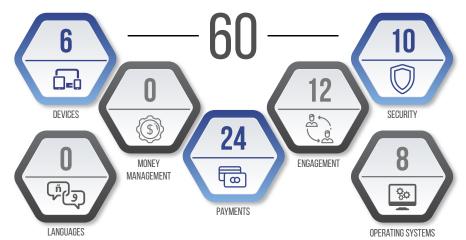
**Company:** Moroku **Founded:** 2012 **Categories:** Money Management, Engagement, Operating System, Devices, Security



Moroku is a financial services technology company that builds mobile banking and payment platforms that banks use as white label solutions to engage with their customers. For example, the company's Moroku Game System builds engagement by gamifying consumer interactions in banking and payments.

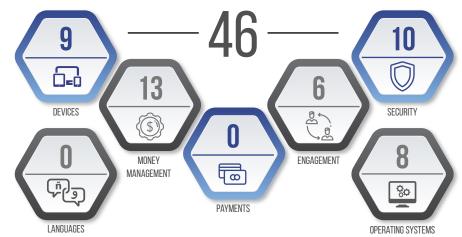


**Company:** MShift **Founded:** 1999 **Categories:** Payments, Engagement, Operating Systems, Devices, Security

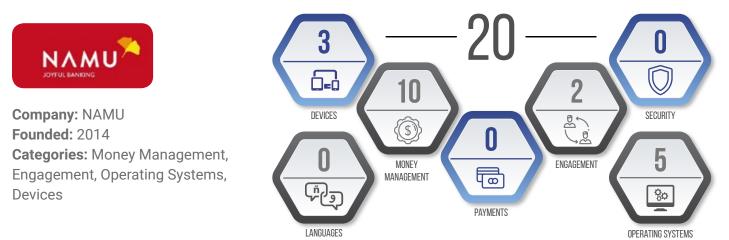


MShift offers payments and mobile banking solutions to banks and financial institutions. The firm supports P2P and bill payment as well as ACH payments and gives banks and FIs the ability to offer deals and rewards programs to advertise products. MShift provides secure services where sensitive user information is transmitted via end-to-end SSL.

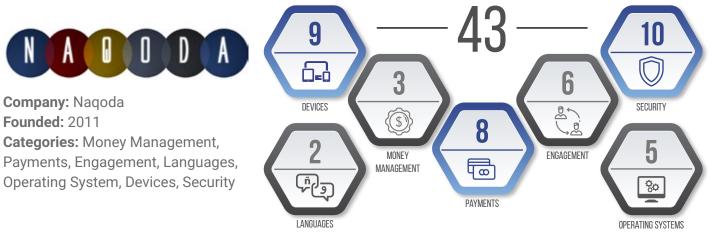
Company: MX Founded: 2010 Categories: Money Management, Engagement, Operating Systems, Devices, Security



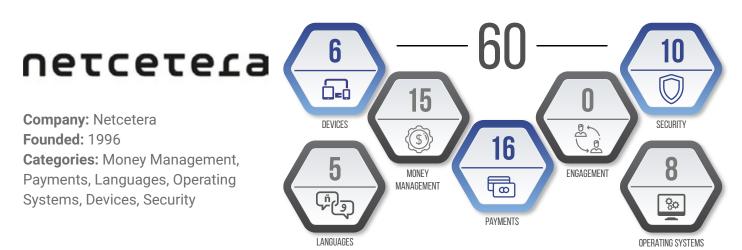
MX works with partners and clients to enable digital money management and omnichannel banking solutions. The solution offers analytics tools with embedded alerts to increase bank users' knowledge of how their expenses evolve. It also allows banks to deploy marketing strategies using tools like in-app notifications. MX is PCI compliant.



NAMU is a white-label digital banking platform and mobile app. Customers of banks that install or run the platform can use the app to review transactions, record spending on a calendar and search financial history. They can also link accounts to social network profiles.



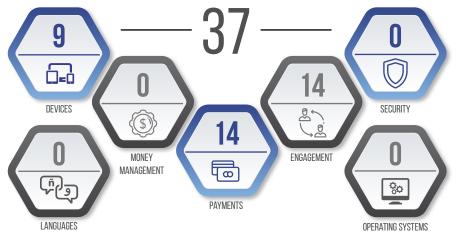
Naqoda provides software solutions and consulting to the financial industry. Its Core Banking solution works across online, mobile and tablet channels and offers different tools, ranging from money transfers to loans.



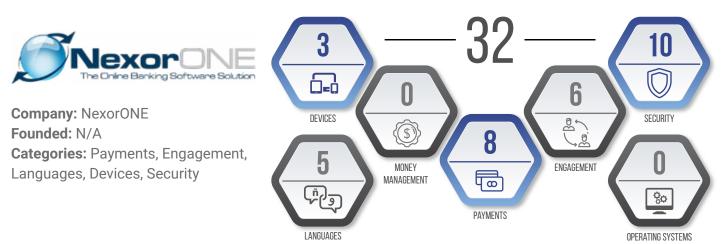
Netcetera is a software developer that has created a mobile banking software that enables bank customers to access their assets, make payments, place stock exchange orders, contact the bank using the integrated mailbox and the location of the nearest ATM. Netcetera also offers a personal finance management module that enables users to better organize their finances by setting saving goals and categorizing transactions.

## NETIKS

**Company:** Netiks **Founded:** 2001 **Categories:** Payments, Engagement, Devices



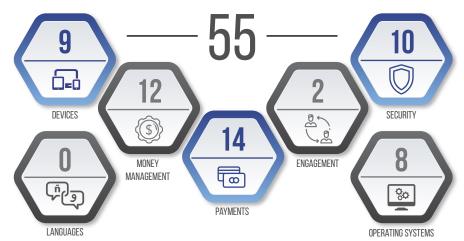
Netiks develops and deploys advanced e-business solutions primarily focused on internet financial and banking applications, customer relationship management, business intelligence, internet/extranet solutions and e-business integration. Its e-banking software enables bank customers to access and manage their accounts, make transfers and bill payment and includes card management and reporting tools.



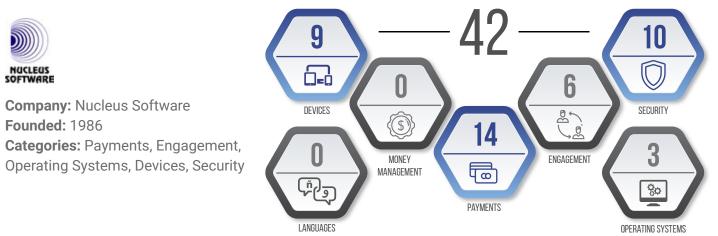
NexorONE is an online banking software provider for private international banks, offshore financial institutions, savings and loans, credit unions, investment fund managers and payment processing companies.



**Company:** NF Innova **Founded:** 2013 **Categories:** Money Management, Payments, Engagement, Operating Systems, Devices, Security



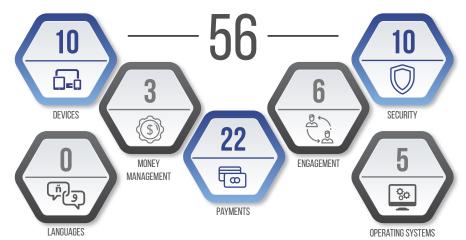
NF Innova is a software solutions company that specializes in creating Omni-Channel Customer Interaction products. iBanking, the company's flagship product, enables banks' clients to check their account balances, make payments and transfer money between accounts. In addition, iBanking Personal Finance module offers capabilities including cost and revenue tracking, transaction categorization, budget control and a payments calendar. iBanking also allows integration with the social networks such as Twitter, Facebook or YouTube video service. The solution offers international security standards and protects transactions by data encryption.



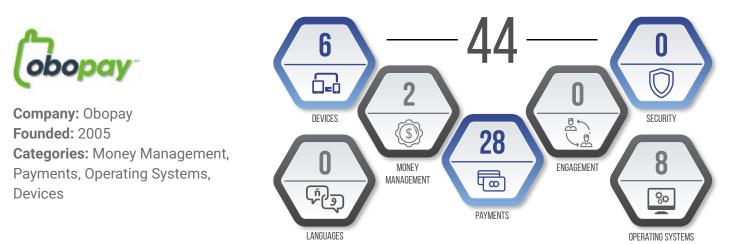
Nucleus Software provides lending and transaction banking solutions for financial institutions. The company offers platforms designed to support retail lending, corporate banking, cash management, mobile and internet banking, automotive finance, and other business areas.

### NYMBUS

**Company:** NYMBUS **Founded:** N/A **Categories:** Money Management, Payments, Engagement, Operating System, Devices, Security



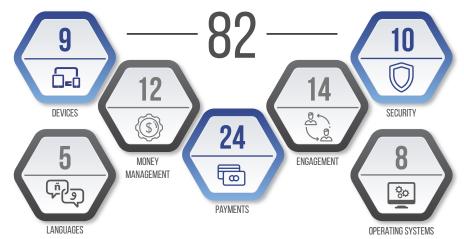
NYMBUS offers a software system that includes core processing functionality, a suite of applications and the hardware and network infrastructure to power them. Among the features in the core processing solution are personal financial management, interactive statements and multiple account management.



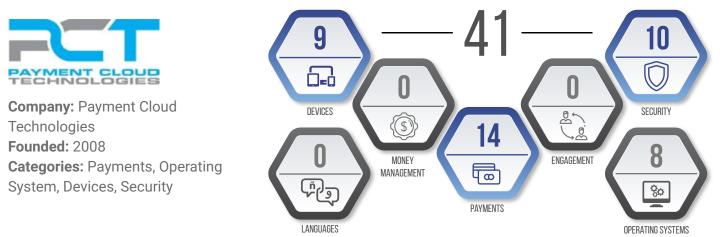
Obopay provides businesses an integrated processing platform capable of linking multiple participants into a transaction network. Obopay offers money management services under a single white-labeled mobile payment platform designed for service providers, banks and retailers. The platform gives customers the ability to make money transactions by using a virtual wallet which can hold money, coupons, loyalty points, stored value cards and membership cards. P2P payment feature and merchant payments are also supported.

### ORACLE

**Company:** Oracle **Founded:** 1977 **Categories:** Money Management, Payments, Engagement, Languages, Operating Systems, Devices, Security



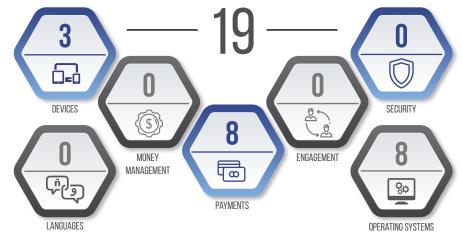
Oracle is a hardware and software developer offering integrated solutions to a range of industries. Oracle offers banks and financial institutions the Oracle Banking Digital Experience solution, which includes digital marketing, customer and product acquisition, service and social engagement tools to enable banks to modernize their digital channels. It also offers PFM features such as budgeting and spending categorization and payment capabilities including P2P, bill payments and payments at POS.



Payment Cloud Technologies (PTC) has developed bank.VISION, a digital banking solution which allows customers to deliver banking services via the cloud. The system enables financial institutions to provide services such as digital wallet, bill payment, online, email and SMS alert facilities as well as money-management tools, among others.



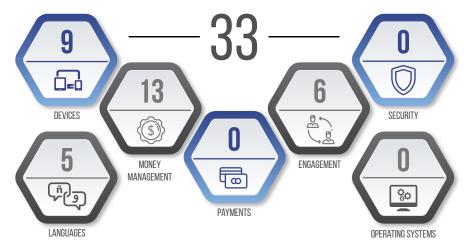
**Company:** PayKey **Founded:** 2015 **Categories:** Payments, Operating System, Devices



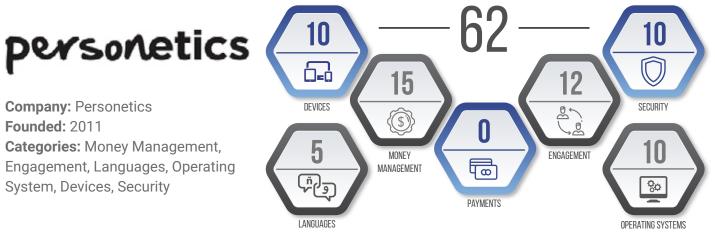
PayKey's solutions aim to help banks blend their financial offerings into their customers' social and messaging experiences. The company's Mobile Banking Keyboard solutions integrate with the bank's mobile app, allowing users to initiate and complete several financial services, including P2P payments, payment requests, check balancing and cardless cash withdrawal, to name a few.



**Company:** Perfectsen **Founded:** 2010 **Categories:** Money Management, Engagement, Languages, Devices



Perfectsen is a Personal Finance Management solution provider offering banks a PFM functionality to help them increase loyalty and retention. Customers can understand their finances through graphs, charts and reports of their spending, income or budget. Perfectsen has also deployed The Hook, an enterprise ad management platform for online banking, marketing sites, mobile and other digital channels that require audience targeting and retargeting. The Hook uses transactional data, demographics and psychographics to perform targeted cross selling across digital channels.



Personetics is a company with locations in New York, London and Tel Aviv that develops financial services which employ AI, predictive analytics, machine learning and natural language understanding technologies in order to help users improve their finance.



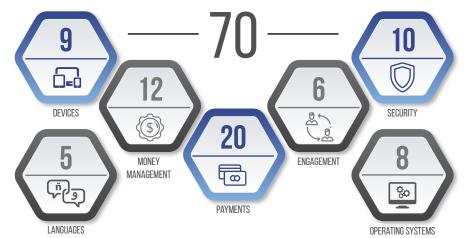
**Company:** Probanx **Founded:** 2000 **Categories:** Money Management, Engagement, Languages, Devices



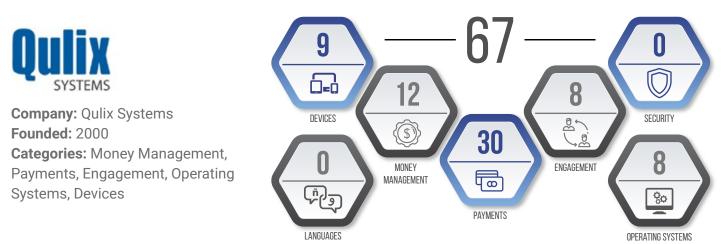
Probanx Information Systems, a banking software company based in Nicosia, Cyprus, offers an online banking solution that provides such features as international money transfers, multiple languages and transaction history.



**Company:** Q2 Software, Inc. **Founded:** 2004 **Categories:** Money Management, Payments, Engagement, Languages, Operating Systems, Devices, Security



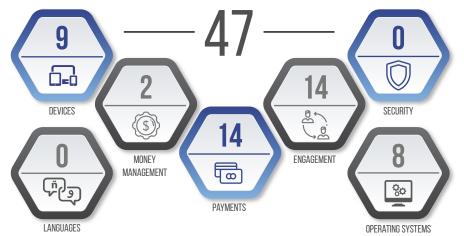
Q2 Software, Inc. offers financial institutions and banks cloud-based virtual banking solutions to communicate and transact in an easy and secure way. By leveraging virtual banking software across Q2 single, non-siloed technology platform, banks and FI can deliver unified omnichannel banking services from a single secure application. The company's featured payment functionality supports bill payments, domestic and international wires as well as ACH transactions. Q2 offers cross-channel Multi-Factor Authentication and open vendor integration with the financial institution's other third-party applications.



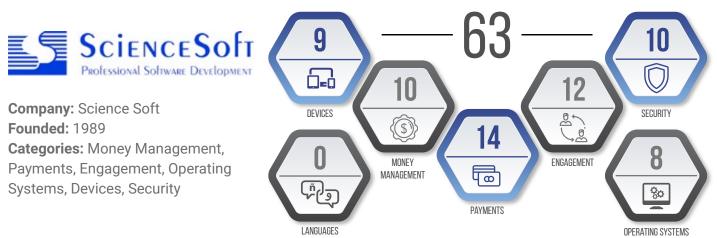
Qulix Systems is an international provider of software development and QA outsourcing services across a number of verticals, including finance and banking, telecommunications, insurance, health care, SCM and manufacturing. The company develops automated systems for remote banking, including internet banking, mobile banking, ATMs and teller workstations, and SMS banking. Its payments solution enables users to make P2P and bill payments, as well as pay in-store and online. Quilix also offers development and implementation of systems for personal finance management (PFM), online loan service portals and banking systems integration.

#### sandstone TECHNOLOGY

**Company:** Sandstone Technology **Founded:** 1996 **Categories:** Money Management, Payments, Engagement, Operating Systems, Devices



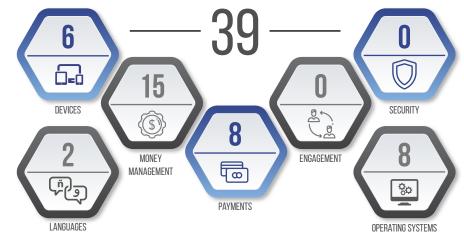
Sandstone Technology develops digital banking solutions for financial institutions. The company deploys Internet banking, mobile banking and personal financial management products, enabling banks to offer personalized platforms to their customers. Sandstone Technology's solutions include capabilities such as customer engagement (including social media integration and offers), money transfers and bill payments. The company's PFM tool complements financial institutions' existing online banking systems by providing wealth analysis and budgeting features.



ScienceSoft is an international software development company that provides solutions to industries such as banking and finance, healthcare, retail, telecom, and the public sector. The company offers banking institutions internet and banking apps, payments solutions, loyalty and reward programs, CRM tools, information security and risk management, and more.



**Company:** solarisBank **Founded:** 2016 **Categories:** Money Management - Payments – Operating System -Devices



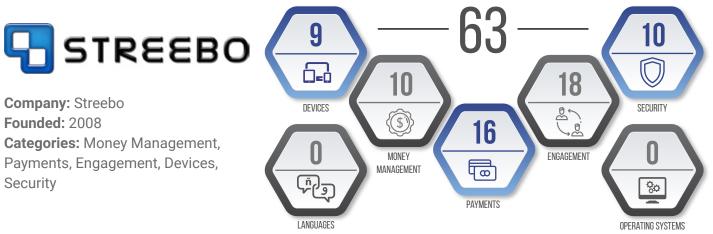
The solarisBank AG banking platform has a full banking license and enables companies to offer their own financial products. Partners can access solarisBank modules for e-money, instant credit and digital banking, as well as application program interface (API)-integrated services from third-party providers.



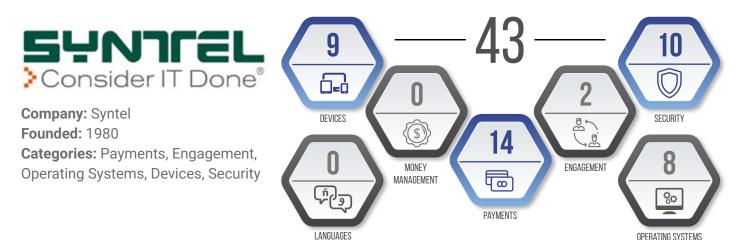
LANGUAGES

Strands, Inc. develops white-label software solutions for banks and retailers. Strands' Personal Finance Management app drives engagement between accountholders and financial institutions. Among other features, the app offers automatic categorization, budgeting and saving goals, analytics and a financial calendar. Strands also offers Card-Linked Offers (CLO), a marketing tool that enables retailers to target highly relevant deals and rewards to card-holders through digital banking channels.

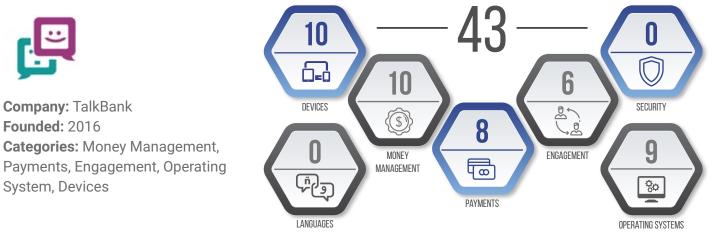
OPERATING SYSTEMS



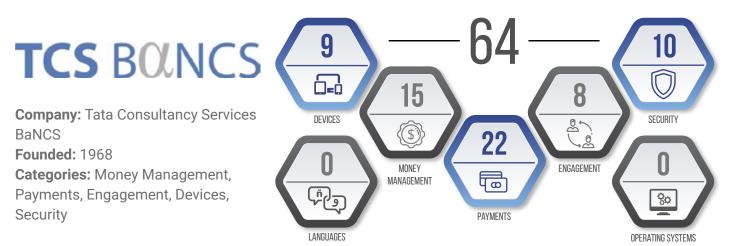
Streebo delivers mobile technology solutions for a wide range of industries, including banking, insurance, financial services, retail and health care, among others. The firm's mobile banking app offers account management tools that allow users view their balance details, pay bills, make money transfers and make deposits.



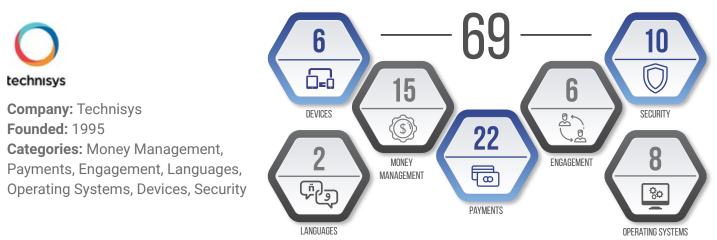
Syntel is a provider of IT services offering solutions to a wide range of markets. For the banking and financial services industry, the company offers multichannel banking solutions as well as payments management platforms. Its online banking solution provides banks with customer engagement tools such as e-campaigns, social media campaign management and portals.



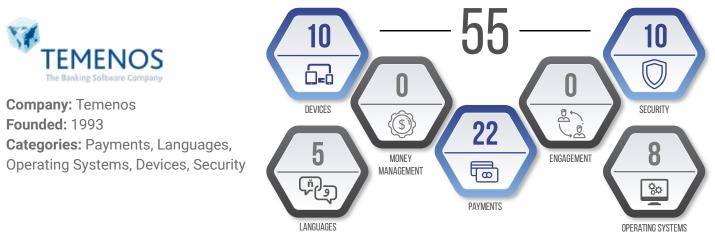
TalkBank uses artificial intelligence (AI) to develop chatbot banking products. The solutions enable banks to provide customers with functions such as transfers and bill splitting.



As a member of the Tata Group, Tata Consultancy Services BaNCS offers a suit of solutions for the financial services industry. TCS BaNCS Retail banking solution provides banks with a wide range of digital functionalities including account management, bill payments, P2P payments, remote check deposit, credit card management, personal financial management tools, social media integration and marketing campaign management, and more.



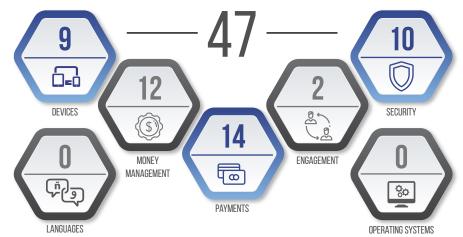
Technisys is an omnichannel digital banking company offering a different range of digital banking solutions focused on the bank's clients and their corporate functioning. Some of its core banking services include risk and account management, while its omnichannel offerings include payments and personal financial management capabilities. Technisys also offers sales features to help banks to provide an array of tailored offers using available big data and analytics tools.



Temenos Group works with institutions ranging from retail, microfinance and Islamic banks to wealth management, insurance and credit unions on the development of digital financial solutions. Their offers include front end as well as middle and back office solutions and services covering risk and compliance or cloud banking between others.



**Company:** TheBankCloud **Founded:** 2009 **Categories:** Money Management, Payments, Engagement, Devices, Security



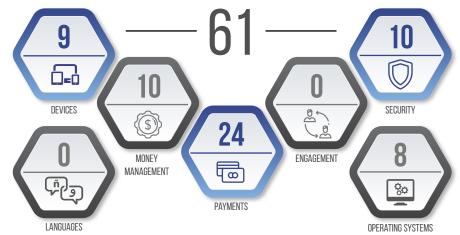
TheBankCloud is a platform for digital banking that enables banks and financial institutions to deploy new banking technologies. The platform offers several functions from mobile banking to personal finance management and wealth management.



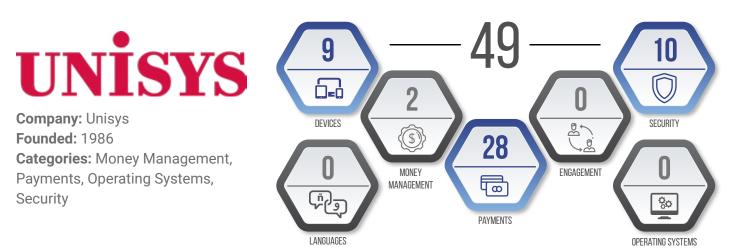
TSWG is an Australian FinTech services company that offers digital banking solutions, digital customer on-boarding and lending platforms and managed network and hosting services.

# tyfone

**Company:** Tyfone Inc. **Founded:** 2004 **Categories:** Payments, Operating Systems, Devices, Security



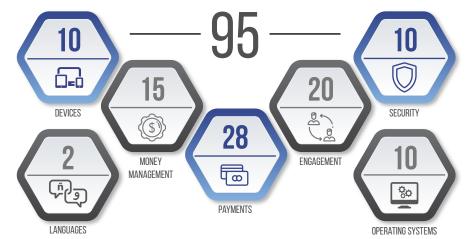
Tyfone has developed a suite of mobile financial services platforms that enable banks to offer their customers a secure banking and payment system. Tyfone's Mobile Banking solution allows customers to view account balances and transaction history, transfer funds, add a payee, capture mobile remote deposits, set and receive alerts and notifications, pay bills, find ATM/branch locations and manage accounts. The company also offers a Secure Transaction Platform architecture for Internet Banking, enabling users to protect their data and transactions with multifactor authentication.



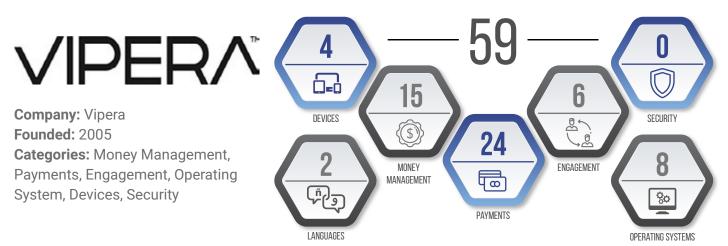
Unisys is a global information technology company that specializes in providing solutions to clients in the government, financial services and commercial markets. The company has developed Elevate, an omnichannel banking solution with capabilities ranging from personal finance management to eWallet payments.

## **urban** |ft<sup>™</sup>

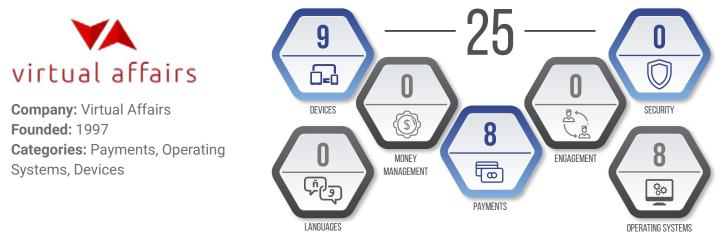
**Company:** Urban FT, Inc **Founded:** 2012 **Categories:** Money Management, Payments, Engagement, Languages, Operating Systems, Devices, Security



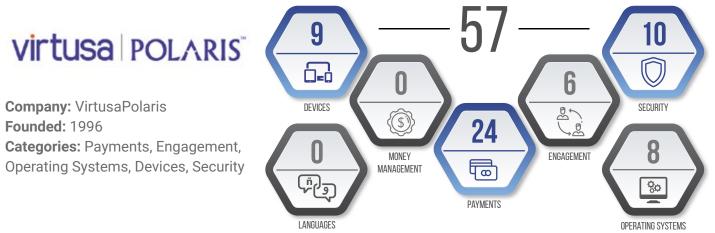
Urban FT is recognized as the industry's leading SaaS-based digital payments platform that enables any brand to seamlessly launch a branded Mastercard or Visa card, lifestyle mobile app and Web solution to complement its core business. We give brands a complete platform to enhance every element of the customer/brand relationship, leveraging what they're doing today by adding a financial services framework, built on our unique understanding of driving the customer journey. Our platform enables brands--including 75 financial institution clients in addition to nonbank clients, representing leading national brands in telecommunications, insurance and travel--to uniquely engage their customers, adding value by deepening and expanding how and when customers interact with the brand.



Vipera is a provider of digital financial services and customer engagement solutions. The company's products range from mobile banking and payments to loyalty and marketing tools.



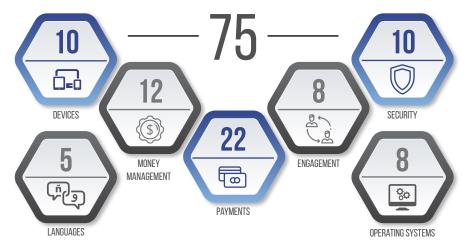
Virtual Affairs is a software company that specializes in digital channel solutions for banks and insurance companies.



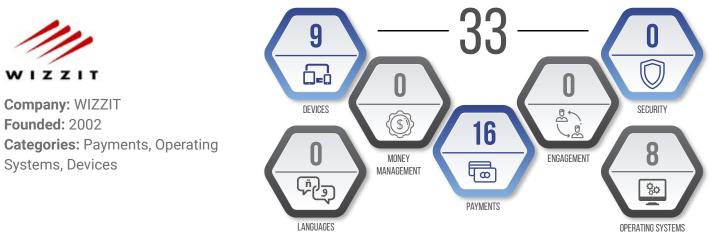
VirtusaPolaris develops software solutions for vendors in the banking and financial services, insurance, telecommunications, technology and media, information, and education industries. The company offers banks a range of solutions, including digital banking, mobile payments, omnichannel banking and more. VirtusaPolaris solutions support P2P payments, NFC payments at POS and bill payments.



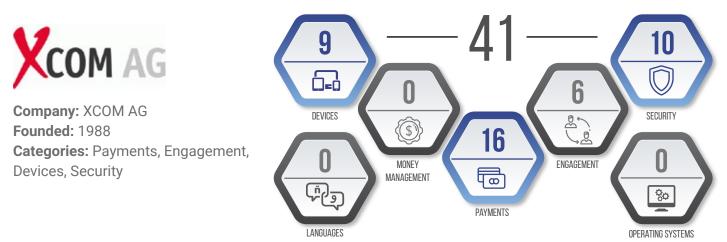
**Company:** VSoft **Founded:** 1996 **Categories:** Money Management, Payments, Engagement, Languages, Operating Systems, Devices, Security



VSoft Corporation offers platform-based services for the banking, financial services and insurance industries. Its IRIS Digital Banking Platform packages online banking, mobile banking, and mobile deposit into a single solution. The company also offers payment capabilities that include wire transfers, P2P and bill payments, as well as personal financial management tools such as budgeting, account aggregation, auto categorization and debt management. In addition, the solution provides social media integration and offers banks digital target marketing tools, enabling them to create targeted advertisements based on specific user data.



WIZZIT is a mobile banking solution provider that enables users to check their balances and make interaccount transfers, P2P services and transfers to other banks. WIZZIT's mobile wallet can process multiple payment types, including POS and in-app purchases.



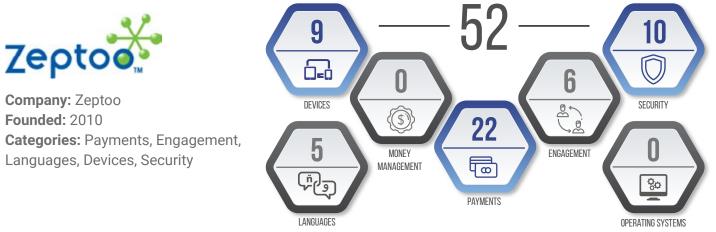
XCOM AG is a provider and developer of e-banking and payment transaction solutions. The company's multichannel banking systems enable banks to generate loyalty among their clients. XCOM systems offers customer engagement features and supports P2P payments, payments at POS and as in-app purchases.



LANGUAGES

Zenmonics provides information technology, business solutions and consulting services to the banking and finance sectors. Its digital banking solution offers capabilities such as bill payments, person-to-person money transfers, and notifications surrounding recent transactions, account and balance access, and customer engagement tools such as recommended products and offers, and more.

OPERATING SYSTEMS



Zeptoo empowers financial institutions with branchless banking and mobile payment solutions. Zeptoo mBank is a solution for financial institutions that enables its customers to use their mobile to check their balances, transfer funds and make bill payments. Users can also get promotional offers and other notifications directly on their smartphones.

## About

### **DIGITAL BANKING**TRACKER™

The Digital Banking Tracker<sup>™</sup> brings you the latest news, research and expert commentary from the FinTech and consumer banking space, along with a provider directory of notable movers and shakers that are working hard to reinvent the banking industry.

#### **PYMNTS.**com

PYMNTS.com is where the best minds and the best content meet on the web to learn about "What's Next" in payments and commerce. Our interactive platform is reinventing the way companies in payments share relevant information about the initiatives that shape this dynamic sector and make news. Our data and analytics team includes economists, data scientists and industry analysts who work with companies to measure and quantify the innovation at the cutting edge of this new world.

#### feedzai

Feedzai is AI. We're coding the future of commerce with a leading platform powered by artificial intelligence and big data. Founded and developed by data scientists and aerospace engineers, Feedzai has one critical mission: to make commerce safe. The world's largest banks, payment providers and retailers use Feedzai's machine learning technology to manage risks associated with banking and shopping, whether it's in person, online or via mobile devices.

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