Selfie Payments: Innovative Way Pay Contactless



Photo: from paymentscardsandmobile.com

In the FinTech world today, facial biometrics is considered an innovative technology because it represents the most secure alternative to common passwords. Biometric facial recognition during payment procedures (Face Pay, selfie biometrics) makes it super comfortable to shop offline: no bank card, smartphone, or any other device is required. You even don't have to scan your fingerprint. You have to do nothing! Once a user approaches the purchase area, the system recognizes them by their face and will charge the card a certain payment. There is no need to worry if you've left your smartphone or card at home. To buy something online, it is enough to bring the device with a camera closer to your face.

With the growing demand for seamless payments, we are witnessing how selfie biometrics is turning from a trendy technology into a payment standard. Let me briefly tell you about Face Pay systems on the global market and how they are applied in real cases.

Modern Face Pay Solutions in the Identity Market in 2021. Cases

PopPay

Contactless payment system from PopID, an American company that develops solutions to verify a person's identity by their face for activities such as logging in, paying, and using loyalty programs. The system is suitable for all retail formats: checkout, car cafe, stands, dining service.

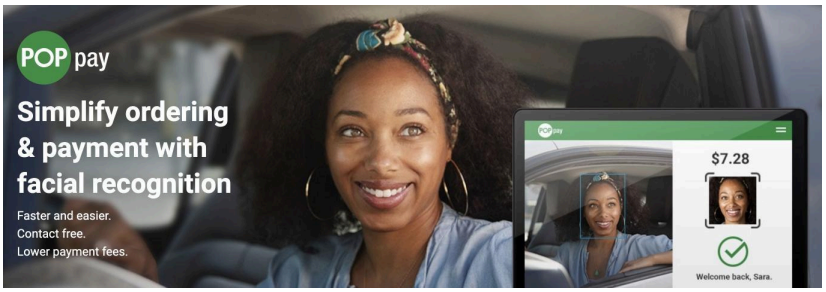


Photo: PopPay[1]

How it works. To log in, take a selfie. The photo is protected by a digital key and stored in the PopID cloud. You can save your billing data. The app requires consent to be recognized anywhere with PopID support. When you pay, the cloud matches the encrypted image to your key and lets the company know who you are[1].

Smile to Pay

The payment method is based on facial recognition in China's Alipay payment system, which is owned by Ant Group fintech company consolidated into the accounts of the Alibaba internet giant. Uses state ID card data[2].



Photo: cnx-software.com[3]

How it works. Before making the first payment at each new outlet, the buyer must go through two-factor authentication for security. To make a payment, you need to tell the cashier or enter your phone number yourself, then look at the camera of the payment

device and smile. Dragonfly's portable payment device has a modern 3D camera that instantly identifies the person. The latest version of the device is capable of doing this under different lighting[4]. Liveness detection is determined by the movement of the pupils.

Case. Dragonfly devices are available in more than 300 cities in China: they are installed in Freshippo supermarkets (Alibaba's own chain), Lotus supermarkets, 7-Eleven stores, Wedome bakeries and numerous small shops. In addition, vending machines and even hospitals in Jiangxi province are equipped with such systems.

Frog Pro

Frog Pro is a Face Pay system of the Chinese payment system WeChat Pay, owned by Tencent internet giant. The platform is the global leader in using facial recognition technology in the payment segment. WeChat Pay processes a billion transactions daily, Frog Pro is used by 600 million people[5].

How it works. The Frog Pro features a 10.1-inch two-sided screen with an improving image filter that does not affect the algorithms responsible for identification. Along with that, Frog Pro has a 3D camera with depth detection to pay through facial recognition and a QR code scanner.

Face to Pay Nestle Market

The system is a joint project of Spanish CaixaBank, Nestle España, and Payment Innovation Hub. CaixaBank is the world's first bank to apply facial recognition to ATM withdrawals without entering PIN[6].

How it works. Before making your first purchase, you need to download the app and register your personal details, a map, and a photo. After that, you can pay for purchases at Nestle Market, which has a checkout equipped with a tablet with a camera and an internet connection. When paying, the camera takes a selfie and compares it to the initial image.

Selfie & Go

Spanish app for banking transactions. Created by Veridas, a facial biometrics development startup formed by an alliance of BBVA bank and IT company Das-Nano in partnership with the restaurant company Sodexo Iberia.

How it works. You need to download the app, register a selfie and a payment card. When paying, you need to enable Bluetooth and enable your phone location, look at the screen. The system will scan your face and check the image by matching it with the one from the data photo bank.

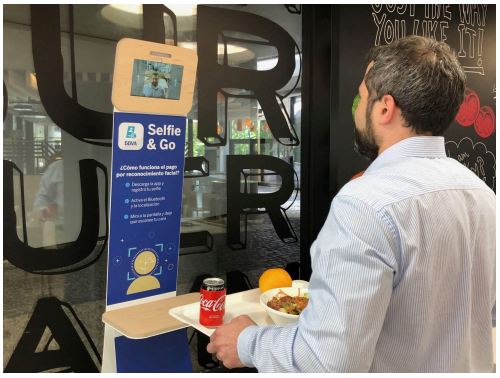


Photo: BBVA[7]

Case. Initially in 2016, the solution allowed you to sign up to the banking app using selfies. In 2018, this app already allowed BBVA employees to make orders at different restaurants located in the Ciudad BBVA headquarters buildings. One could reserve a table in advance, make an order, have lunch, and leave the hall without asking for a bill—payment was charged on exit using biometric machines with cameras. Users can place and pay for orders by opening the app—this is known as «zero-click payment». This same year, BBVA is working on Face Pay solutions for stores that use RFID tags. In 2021, facial biometrics is supplemented by voice biometrics[8]. Today, Veridas facial biometrics technology is recognized as one of the best in the world according to NIST [9].

OPAY

Russian solution from the Ovision IT company, which builds software and payment terminals powered by facial recognition technology. The manufacturer is a member of VTB Bank accelerator, which together with VISA has launched pilot projects of pay-by-look services in some Russian catering networks[10].

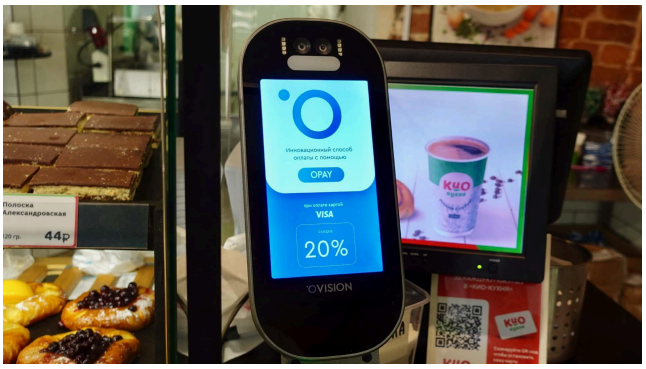


Photo: OPAY[11]

How it works. According to the developer's representative, the device is powered by convolutional neural networks and has one of the fastest recognition speeds in the world[12]. The project team also developed its liveness detection algorithm to help distinguish a living person from a photograph. To start using the service, you need to download the app, take a selfie, and add a payment card to the app.

Sber and X5 Lab

Financial conglomerate Sberbank of Russia (Sber ecosystem) and innovation laboratory of leading Russian retailer X5 Retail Group have introduced glance payment technology in major Moscow chain stores. VisionLabs company solution helped implement biometric

identification at self-service checkouts. The company, which is a part of Sber ecosystem, is a Russian developer in the sphere of computer vision. VISA became the partner payment system.

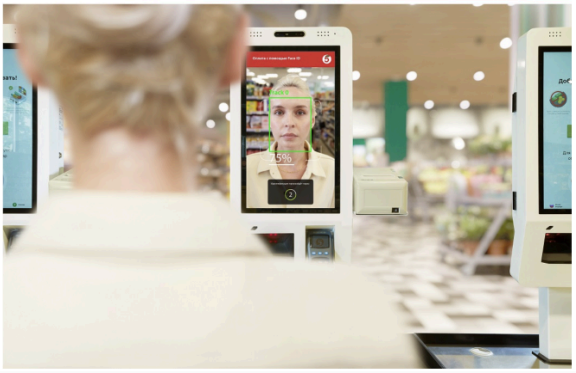


Photo: X5 Lab[13]

How it works. First you need to register your biometrics in a bank office. Second, select «Pay at a glance» and specify your payment in the bank mobile app. At the self-service checkout, you need to scan the item, select «Pay at a glance» mode, remove the mask for a couple of seconds and look at the camera. The scanning device uses a 3D camera with high recognition accuracy and depth capture[14].

Pix

The list ends by a Brazilian payment system with facial recognition, which is still being developed by Veritran in partnership with Facetec — the world leader in 3D Face Liveness & Matching software. This is a solution for banks and fintech companies looking to upgrade their payment systems. For the end user, Pix is the ability to log in and make transactions in banking apps through selfie biometrics.

How it works. 3D biometric technology is used that identifies a person by scanning the face with a USB camera. FaceTec Liveness provides real-time identity verification: it biometrically matches selfies with photo ID document and registers it for future checks[15].

How the Contactless Payment Market and Face Pay Will Grow

The pandemic has transformed the payments industry, accelerated self-service development and the introduction of contactless online services. Lockdown in many countries has led to a decline in the use of cash and plastic cards. This is hardly a reversible situation as people have tried the comfort of seamless transactions.

According to Grand View Research, the global contactless payments market was estimated at $1.34 trillion in 2020. It is expected to grow at an average annual growth rate of 20.3% from 2021 to 2028[16].

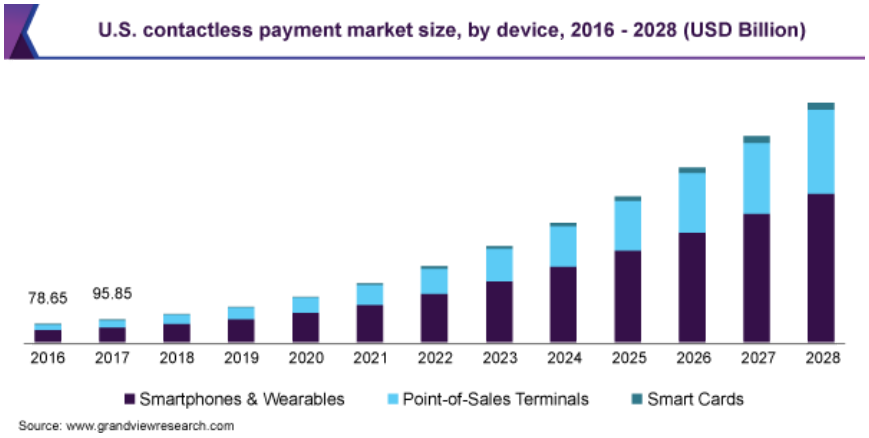


Photo: Grand View Research[17]

Facial recognition technology is growing at an explosive rate. The global market in 2020 was valued at $3.86 billion USD and is expected to grow at an average annual growth rate of 15.4% from 2021 to 2028[18].

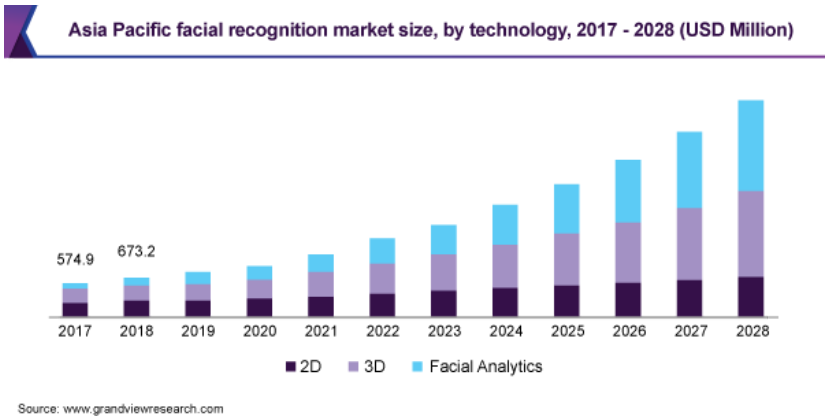


Photo: Grand View Research[19]

Growth[20] of cyber-attacks and lack of infrastructure in developing countries is expected to hinder the growth of the contactless payment market. However, many experts and large businesses believe that paying through facial recognition is the future. Honestly, so do I.

Resources:

1. https://www.popid.com/#howitworks
2. Making Cutting-Edge Technology Approachable: A Case Study of Facial-Recognition Payment in China
3. Alipay Dragonfly F1 PoS Enables Payments with Face Recognition
4. Alipay and WeChat Pay's Facial Recognition in China.
5. Alipay and WeChat Pay's Facial Recognition in China
6. The first grocery store featuring payment by facial recognition is here.
7. BBVA lanza un sistema de pagos por reconocimiento facial
8. Veridas face biometrics upgraded, voice biometrics deployed for pensioner verification
9. BBVA and das-Nano strengthen their alliance with a capital increase in Veridas
10. Visa and VTB launched a pay-by-look service in the KiO Kitchen food shop chain
11. OPAY. Contactless face recognition payment system launched in St. Petersburg
12. The expert told when it would be possible to "pay by face" for purchases and trips.

13. Payment by face
14. Media
15. FaceTec selfie biometrics integrated for enterprises by Veritran as market stays hot
16. Contactless Payment Market Size & Share Report, 2021-2028
17. Contactless Payment Market Size & Share Report, 2021-2028
18. Facial Recognition Market Size & Trends Report, 2021-2028
19. https://www.grandviewresearch.com/industry-analysis/facial-recognition-market
20. Contactless Payment Market Size & Share Report, 2021-2028