

Payment service providers as an eCommerce payment aggregators

In the digital age, where online shopping has become everyday life for millions of consumers around the world, eCommerce payments play a key role in shaping the shopping experience. Convenience and security are factors that influence purchasing decisions, and technological innovations make the payment process more and more complex and diverse.

ECommerce payment - what is it?

ECommerce payments are financial transactions carried out over the Internet that allow users to purchase for their shopping online. They include various payment methods such as:

- **Credit and debit cards** - the most popular payment method. It involves providing your payment card (e.g. Visa or Mastercard) details in the payment form issued by the payment gateway.



Card

enter your debit or credit card details

- **Electronic wallets** - services such as Apple Pay or Google Pay where card tokens generated for a specific card are returned to make a payment.



Google Pay

pay safely with any payment card



Apple Pay

secure card payments

- **Openbanking** - direct transfers from your bank account.



BLIK

payment by code from your bank's application

- **Crypto** - an increasingly popular method, although less common. This is a way of making transactions in which digital currencies based on blockchain technology are used instead of traditional fiat currency (such as dollars, euros or zlotys) e.g. Bitcoin, Ethereum, Litecoin or Ripple

ECommerce payments place a strong emphasis on security and convenience to meet the needs of both sellers and consumers. Additionally, they often involve various security systems, such as SSL, to protect users' personal and financial information and to prevent from frauds.

As this field develops, more and more eCommerce payment methods are being created, and therefore there is a need for entities that aggregate available payment options in one place and allow to manage sensitive card data in the name of the merchants which are not PCI DSS compliant. Such an entity is Verestro Paytool, a payment gateway and a payment service provider that supports above mentioned payment methods such as credit and debit cards, payment with Google Pay and Apple Pay wallets and payment using the BLIK code.

How does it work?

1. Selection of goods or services

- The customer selects the products or services he or she wants to buy and adds them to a shopping cart on the online store's website.

2. Moving to checkout

- After completing the purchase, the customer goes to the "checkout" section, where he enters his contact information, shipping address and chooses a payment method.

3. Choosing a payment method

- Online stores offer various payment methods, such as: Credit or debit card payments (Visa, MasterCard, etc.).
 - **Credit and debit cards** - the most popular payment method. It involves providing your payment card details in the payment form issued by the payment gateway.
 - **Electronic wallets** - services such as Apple Pay or Google Pay where card tokens generated for a specific card are returned to make a payment.
 - **Openbanking** - direct transfers from your bank account.
 - **Crypto** - an increasingly popular method, although less common.

4. Payment authorization

- Depending on the payment method selected, the authorization process can be carried out in different ways:
 - **Card payment:** the customer enters the card data (number, expiration date, CVV code) and approves the transaction. The payment system (e.g. Stripe,

PayPal) then sends the data to the bank for authorization.

- **Online transfer:** the system redirects the customer to his bank's website, where he logs into his account and approves the transfer.
- **Electronic wallet:** after selecting a payment method, the customer logs into his wallet (e.g. PayPal), where he approves the payment.

5. Transaction security

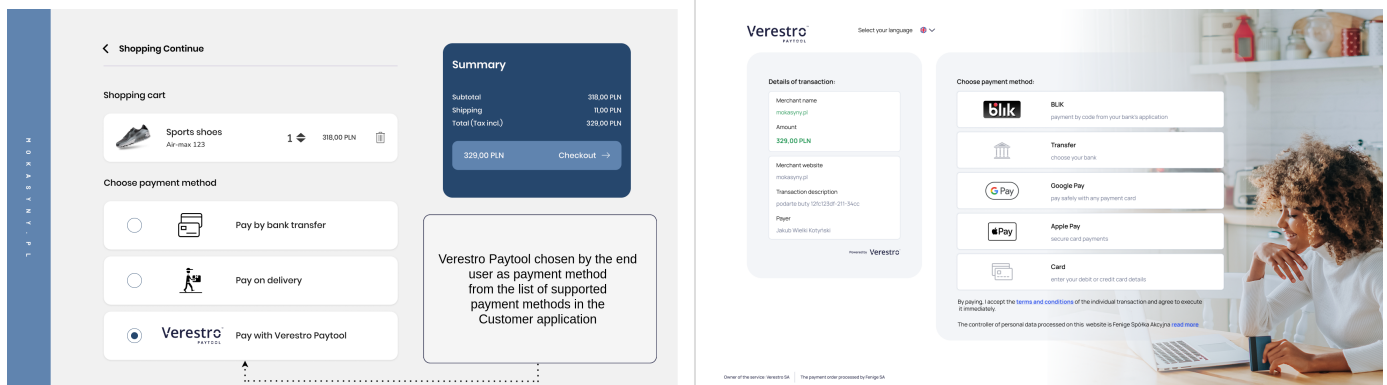
- Transactions are usually secured with encryption protocols, such as SSL (Secure Socket Layer), to prevent third parties from intercepting payment data.
- In addition, some payment methods (such as card payments) require identity verification, such as through 3D Secure, which is an additional verification step (such as an SMS code or approval in a bank app).

6. Transfer of funds

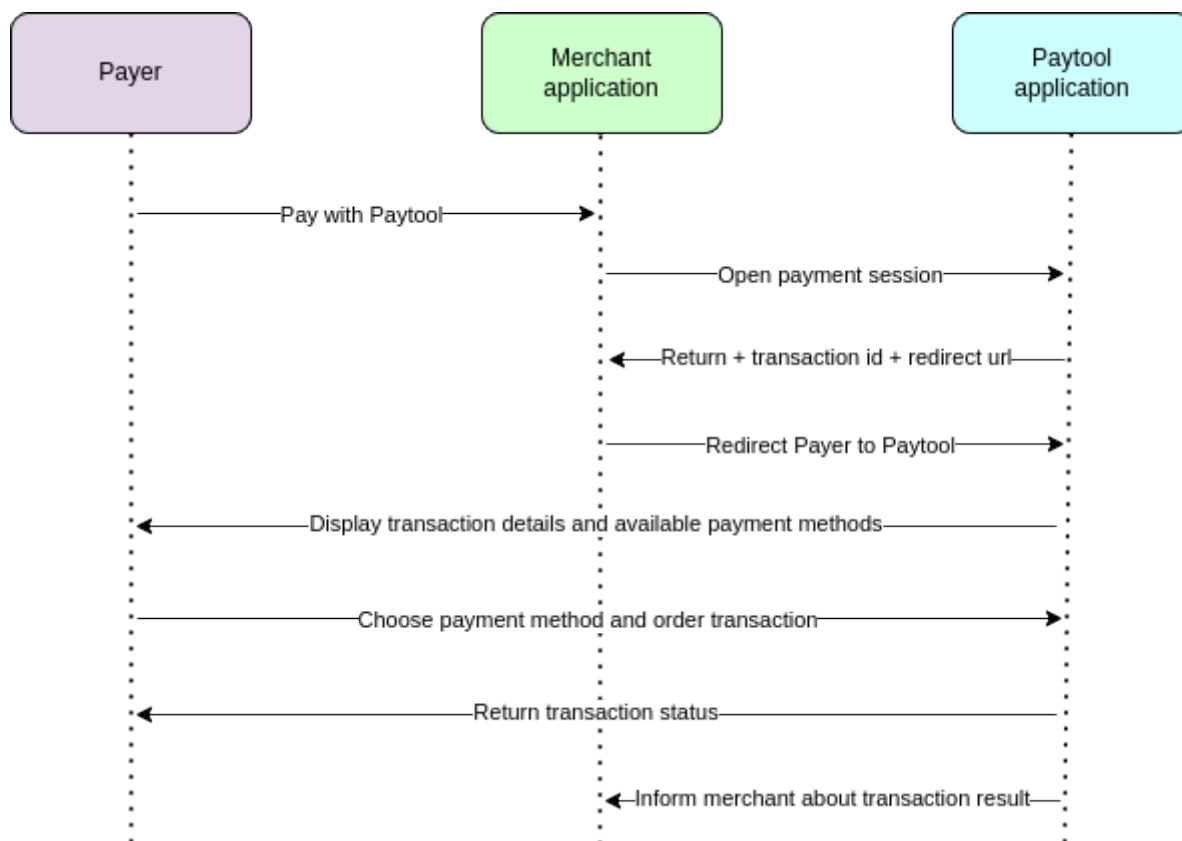
- After successful payment, the funds are transferred to the seller's account.
- Transaction processing time may vary depending on the payment method selected.

ECommerce payment flow using Paytool payment service provider

The first step of the each transaction always takes place in merchant's application. Such application usually is integrated with the various payment gateways (payment service providers) such as Verestro Paytool. Choosing to pay using a particular payment service provider redirects the payer to the PSP's web view, where all payment methods offered by the PSP are listed. The view of such use case from the end user's perspective has been shown below.



At the level of the view of the list of available payment methods, the payment service provider - in this case Verestro Paytool - is already responsible for the entire transaction. Regardless of which eCommerce payment method the payer chooses, the payment service provider must enable the payer to write out the card data or retrieve it from the mobile wallet (e.g. Google Pay, Apple Pay or Click to Pay), check the correctness of the data, perform payer and his card authentication (e.g. 3D Secure) or finally perform the transaction itself and inform the merchant and the payer about transaction final status.



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