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BLOCKCHAIN IN PAYMENTS – TRANSFORMING THE PAYMENTS INDUSTRY

Talk to our Consultant

By leveraging blockchain technology, enterprises can automate their business processes while maintaining high security and transparency. Among many industries that blockchain has transformed so far, the payments and finance industry has been behind the hype. Lately, as the world is undergoing the

We all have evolved from accepting payments only via cash to building cashless economies. With the adoption of multiple digital payment methods, people have begun to accept this money exchange system. With the mass adoption of decentralized technology, people realized the benefits of payments via blockchain.

Blockchain payment utilizes blockchain technology. But to understand this concept better, we must dive into the details of blockchain, how it works in payment systems, and the various benefits. We will answer the following questions in this insight:

- What is blockchain?
- What are the advantages of blockchain in payments?
- How do blockchain payment systems work?
- How can you address the challenges of blockchain payment systems?
- How can you implement a blockchain payment system?
- What are some of the use cases of blockchain in payments?
- What blockchain-based Payment Solution do LeewayHertz offers?

What is Blockchain?

Blockchain refers to a 'chain of blocks. The blocks contain time-stamped digital records of any transactions or data exchange on the distributed network of computers. A "block" has its cryptographic hash, like a unique ID. Every block contains its hash and the previous block's hash, along with data, which connects the blockchain.
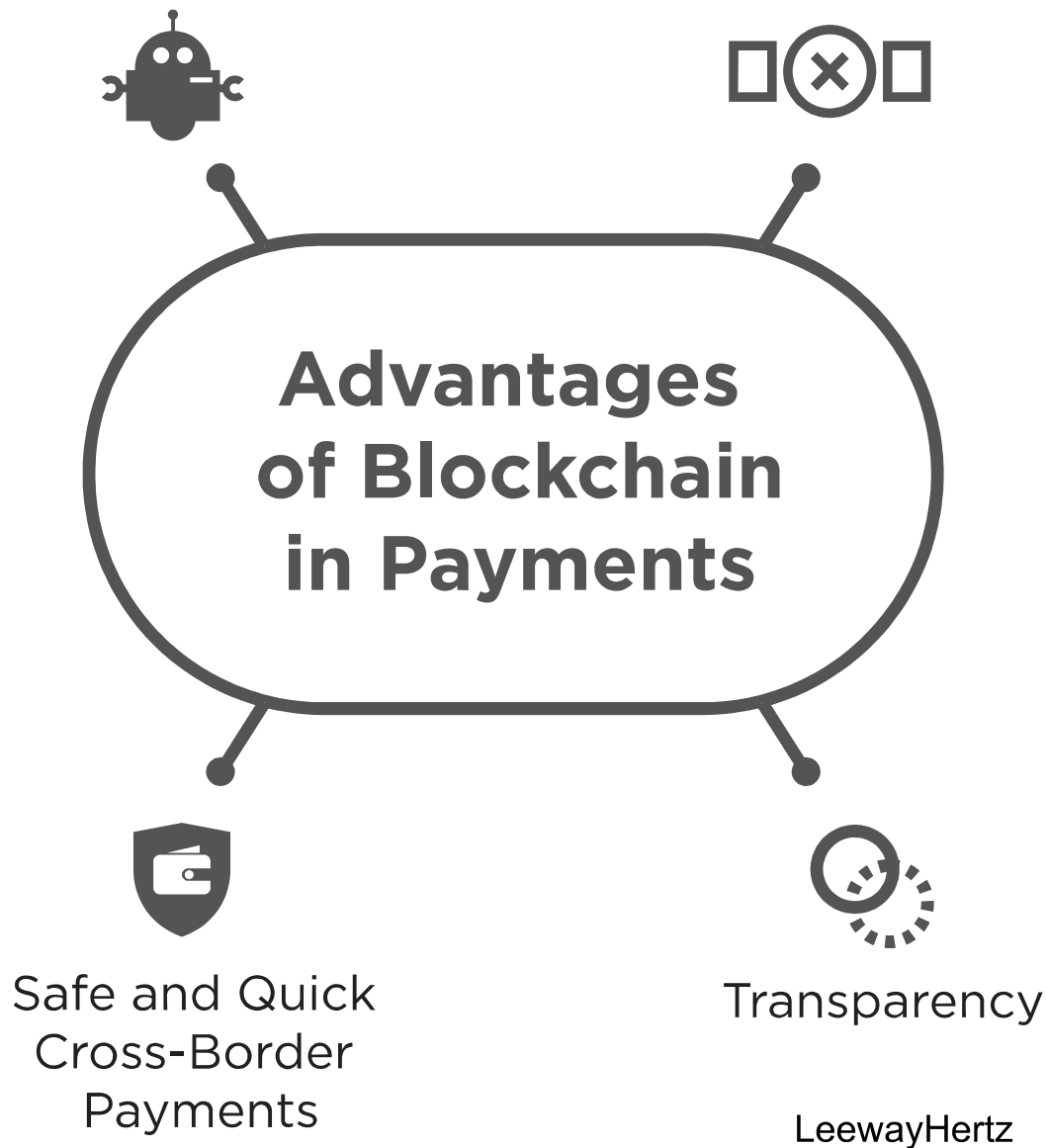
A new block is added to the blockchain whenever a new transaction occurs. Each transaction first needs to be validated by all the network nodes, and the nodes have to come to a consensus via a consensus mechanism to validate a

Blockchain offers multiple advantages like transparency and security, so it is a very suitable technology for the payments and finance industry. Let's learn more about the benefits of blockchain in payments.

What are the advantages of blockchain in payments?

Blockchain facilitates fast, secure, low-cost international payment processing services (and other transactions) through the use of encrypted distributed ledgers that provide trusted real-time verification of transactions without the need for intermediaries such as correspondent banks and clearinghouses. Blockchain technology was initially used to support the digital currency Bitcoin but is now being explored for various applications that don't involve bitcoin. It further offers the following top benefits:

Smart Contracts   Intermediaries

Advantages of Blockchain in Payments

Safe and Quick Cross-Border Payments

Transparency

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Removes intermediaries

There is a need for mediators and intermediaries with the current payments system. To make a payment, one has to pass through several intermediaries and authorizations, such as the payment gateway, exchange mode, issuer, etc. Even though intermediaries are responsible for maintaining the authenticity of payments, they have the following drawbacks:

Whereas, with blockchain payment systems, one can:

- Settle transactions more easily
- Maintain the authenticity of the transactions without the presence of middle-men
- Facilitate peer-to-peer transfers or payments
- Save the transaction data securely
- Develop a cryptocurrency wallet quickly and use it for payments

Such advantages of the blockchain payment system have also motivated banks to introduce blockchain transactions in their system and enjoy the given benefits:

- Simplify transactions
- Settle them quickly
- Eliminate intermediaries from the payment system

Transparency and security

One of blockchain technology's most significant benefits is the high-level transparency it offers. Details of all transactions that take place via a blockchain network are:

- Stored in the blockchain
- Immutable
- Visible to everyone

Hence, while making payments, you don't have to worry about saving any records as they get saved in the blockchain and are kept safe while ensuring the integrity of the data.

blockchain, as any change would be visible.

Safe and quick cross-border payments

Cross-Border payments occur when the payee and the payer reside in different countries. Making cross-border payments has been a problematic area for a very long time, and it faces several challenges, such as:

- There are numerous intermediaries involved.
- The present method may reduce the chances of fraud, but it is more expensive due to commissions.
- The payment processing time is prolonged, as cross-border payments can take one to five days for successful transactions.
- Personal data privacy regulations are not clear.
- There is a lack of transparency.

With blockchain, one can:

- Transfer funds from one country to another very quickly. Blockchain payment systems can reduce payment processing time from days to a few hours.
- Reduce the intermediaries in the payment process, as blockchain ensures the authenticity of payments with a high degree of transparency.
- Ensure the safety of payments and information as all transaction data on the blockchain is immutable.

For example, Ripple (XRP) acts as a cryptocurrency intermediary to facilitate seamless cross-border transactions. If a person from India wishes to pay money to a friend in the USA, the money in Rupees would be transferred as XRP, and the person in the USA would receive it as USD.

running businesses and companies. Smart Contracts can:

- Reduce the payment time
- Help facilitate instant payments
- Automate payment flows.

While writing smart contracts, one should mention all the conditions for transferring payment. Once the required credentials are met, the concerned person is automatically paid.

Suppose a company hires a content creator to provide some content. The person will be automatically paid when he finishes and provides his end of the requirements, whatever is required per the deal. As you understand the benefits of blockchain in payments now, let's learn about the working of blockchain payment systems.

How do blockchain payment systems work?

The blockchain payments system is not complicated. For a clear idea, we have explained how a cross-border payment will occur through a Stellar Blockchain Payment System with the help of an example.
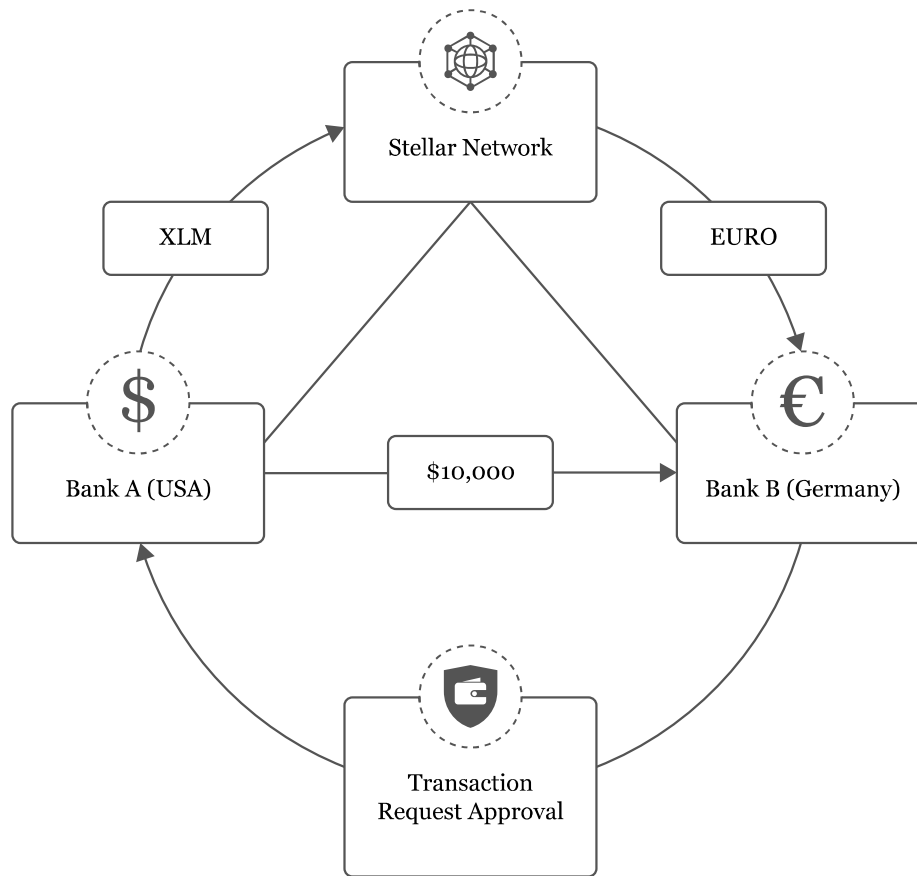
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Suppose you reside in the USA and pay $10,000 to a friend living in Germany. Both of your banks are linked to the Stellar blockchain network, and here's how the payment would take place:

1. You will send a payment of $10,000 from your bank to your friend's bank.

2. Your friend's bank in Germany will receive a transaction request of $10,000.

3. His bank will approve the request after confirming with him.

4. After your bank receives the transaction approval, $10,000 will be deducted from your account.

5. The $10,000 will move to your bank's pool account, and it will convert to Stellar Lumens (XLM).

7. The money will then be credited to your friend's bank account in Germany in the form of Euros.

The banks act as "Anchors" in the Stellar Network. The bodies or organizations that hold deposits and issue credits as per the requirements are known as "Anchors" in the Stellar Network. They are a bridge between the currencies and the Stellar network, as all money transactions occur in credit issued by Anchors in the Stellar Network (except XLM).

Now that you understand the working of blockchain payment systems let us look at how one can address the challenges of blockchain in payments.

How can you address the challenges of blockchain payment systems?

There are very minimal challenges of blockchain in payments that one can address by taking a few measures. Here, we have listed four ways one can deal with the challenges of blockchain in payments:

Security   Standards

Addressing
Challenges of
Blockchain in
Payments

Regulation   Governance

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Technical Standards

When technicalities are considered, a significant challenge is blockchain's incomplete or broken adoption. Fragmented adoption of blockchain has its own set of challenges which can hinder its seamless functioning, such as:

- Increased costs
- Standardization failure

Interoperability is essential to ensure that blockchain payments are seamlessly integrated into existing systems. To address this challenge, a firm focus on the following components is required:

- Development of common technical standards for interoperability
- Enhancement of network scale efficiencies
- Implementation of a standard mode of communication
- Conducting test runs to ensure:
  - Good speed
  - Scalability
  - Compliance with geographical standards

Governance

Since transaction records of payments via blockchain are immutable, challenges that come up here are:

- Lack of reversibility of transactions
- Inability to cancel payments
- Accountability of the blockchain ledger, which stores the information

One can address these challenges by:

- Laying down governance standards to address all challenges
- Developing and integrating solutions to facilitate cancellation and reversal of payments

Regulations

While implementing blockchain solutions, special attention needs to be given to the regulatory compliance required. As sensitive information about people's money and payments is being stored in the blockchain payment

- To ensure complete compliance with regulations, one can:
- Research about all mandatory regulatory standards according to the geographical region.
- Evaluate their blockchain payment system's technical architecture to ensure compliance with the mandatory regulations.
- Regularly update their blockchain payment system according to the respective government's guidelines.
- Keep users updated about the various steps being taken and regulations being followed.
- Immediately take necessary actions in case of any regulation violations.

Safety and Security

Blockchain offers maximum transparency, both good and bad, for the users. On the one hand, it improves the payment systems by smoothening the payment flows. However, on the other hand, it comes up as a concern to users who don't wish to share all of their payment data with everyone.

- To address these challenges, one should:
- Lay down strict security standards.
- Inform users about maintaining and storing their user credentials.
- Conduct regular scans and bug-checks in the blockchain payment systems.
- Implement and comply with all regulatory standards.
- Thoroughly check and test solutions that need integration with the help of third-party vendors or companies.

Whenever one moves from one technical solution to another, they will always face challenges. As blockchain in payments is still a growing industry, meeting a few problems and concerns is very common. However, with proper steps

Now that you know how one can deal with the challenges of blockchain in payments let's understand how one can implement blockchain payments in their system.<h2 id="how_can_you_implement_a_blockchain_payment_system?">How can you implement a blockchain payment system?</h2>

Before beginning, many things must be figured out to implement a blockchain payment system seamlessly.

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Step 1: Define your Project Scope

While defining your project scope, you should figure out which approach you'll be taking to implement a blockchain payment system. Some strategies

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- Developing a new token on a blockchain network like Stellar or Tezos.
- Using a crypto-payment gateway.
- Using Ripple or Stellar to implement a payment system.

Step 2: Determine your Front-End Technology Stack

After defining your project scope, the next step you take is to determine your front-end technology stack. To decide, you first need to figure out what kind of front-end application you wish to provide your users and choose the technology stack for it.

For example, you may use Node.js for a web application or Swift for a native iOS application.

Step 3: Determine your Blockchain Platform

After deciding your front-end technology stack, you must choose a blockchain network platform. There are many blockchain network platforms with great benefits that you can use to implement the blockchain payments system in your business. However, it depends on the approach you choose.

If you plan to build a blockchain network and token from scratch, you should look into the functioning and pricing of some of the most promising blockchain platforms available.

If you plan to develop a new token on an existing platform, you should evaluate the available options before finalizing one.

Step 4: Initiate Development

Before beginning with the execution, the final planning step you need to take is finalizing a highly competent development team. Your approach will decide the members you'll need in your team.

Some of the necessary members your development team should include are:

- Project Managers
- Blockchain Developers
- App Developers (based on your front-end application requirements
- Quality Testers

You can also consider hiring a dedicated development team to implement the blockchain payment system. Now that you're done with planning your project, you move on to project execution.

Step 5: Execute your Project

The execution of your project will differ according to your project scope. You can either carry out the execution yourself or hire a blockchain development company to help you out with the technicalities.

If you are planning to build a new blockchain network and cryptocurrency, then you must build:

- The infrastructure using a cloud-based Infrastructure-As-A-Service (IaaS)
- Your peer-to-peer network via the latest encryption techniques
- A consensus algorithm

If you are planning to develop a new token on a blockchain network like Stellar or Tezos, you must:

- Create your account and crypto-wallet
- Install and configure relevant tools and APIs
- Code your smart contracts
- Test your smart contracts
- Deploy your smart contracts

If you plan to use a crypto-payment gateway, or Stellar or Ripple, you can set them up conveniently to send and receive crypto payments.

Implementing a blockchain payment system is a highly technical task that requires expert supervision to ensure it has been performed efficiently. Therefore, it is always preferable to hire a dedicated blockchain development company to help you perform the task so that you can ensure seamless and complete implementation of the blockchain payment system.

Now that you understand how you can implement a blockchain payment system, let's look at some of the use cases of blockchain in payments.

Get unified blockchain solutions for your business needs

LeewayHertz Blockchain Development Services

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What are some of the use cases of blockchain in payments?

Blockchain has multiple use cases in payments. Here, we have listed four such use cases:

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Cross-Border Payments

As discussed earlier, cross-border payments via traditional payment methods are secure but very expensive and slow. There are numerous intermediaries in the system, which leads to commissions ranging from 3-20% of the amount being transferred.

- Does not any third-party authorizations

Banks like Westpac partnered with Ripple to implement a low-cost cross-border blockchain payment system. Numerous banks and companies plan to get blockchain payment systems implemented in their business to conduct safe and quick cross-border payments.

Trade Finance

Trade Finance means financial activities related to international trade. Trade finance struggles with the vast paperwork of payment records and invoices, bills, credited amounts, etc. Carrying out these procedures takes up a lot of time as several copies of the same paperwork are required for multiple uses. Any manual errors cause the complete documentation to go wrong.

With blockchain payment systems, trade finance paperwork can become more manageable as:

1. No manual effort to record the payment details, invoices, and bills would be required.
2. All members can access one single document as blockchain payment systems work as a distributed ledger.
3. The chances of manual errors will be eliminated as all payments taking place via the blockchain payment system will be saved directly in the blockchain.

Digital Identity Verification

With the current payments system, one has to verify their identity every time they conduct a transaction. Sometimes, verification processes like checking

With blockchain payment systems, the verified credentials of a person can be securely saved in the blockchain, and as blockchain is immutable, the authenticity of the data is also ensured. It will speed up the digital identity verification as the users won't have to put in their verification credentials to make payments repeatedly. It will also give users the authority to choose with whom they wish to share their verification credentials.

Peer-To-Peer (P2P) Transfers

Peer-to-peer transfers enable users to transfer funds directly from their accounts to another person. There are many traditional P2P transfer applications, but with numerous constraints like:

- You can make payments only within a specific region.
- You have to pay a commission to send a payment outside your area.
- You have to save your information, which might not seem safe.
- You cannot make cross-border payments conveniently.

With blockchain payment systems, peer-to-peer transfers, and payments:

- A blockchain-based payment system is decentralized. Hence the security concern can be addressed conveniently.
- Payment can be conducted worldwide as blockchain doesn't have any limitations geographically
- Transaction in blockchain occurs in real-time. Therefore the payment speed will significantly increase.

What blockchain-based Payment Solution do LeewayHertz offers?

determines which payment solution you need, and starts the development.

We can also customize your existing blockchain payment solution through integrations, system modifications, and implementations. Following are our services related to decentralized payment solutions:

DeFi solution

We develop secure and permissionless payment solutions for your DeFi solutions, including decentralized exchange and crypto loan platforms. By leveraging the underlying blockchain technology in our solutions, we allow users to their financial transactions in a transparent and trustless manner with no intermediaries.

P2P lending solution

We build and integrate blockchain payment solutions to process auto-payments using smart contracts to make lending more efficient in your peer-to-peer lending platforms. We help you remove intermediaries from the lending system and enable the direct transaction between the lender and the borrower.

NFT marketplaces

With our trustless payment solutions, you allow buyers and sellers to make payments via crypto wallet. You can either get their wallet developed from scratch or integrate the ready-to-deploy wallet like Metamask and Torres on the NFT marketplaces. Our wallets support storage, sending, and retrieval of funds for NFTs.

Metaverse platforms

We provide a reliable and secure blockchain payment solution for instant crypto payments in your Metaverse projects. It offers a transparent and

assets.

Conclusion

Blockchain technology has done major transformations to the payments industry, and it continues to bring innovations. Transactions distributed across network nodes of computers, payments become very secure, without the risk of tampering or data manipulation. Enterprises that efficiently deal with the challenges of centralized payment systems and form a dedicated and experienced team to implement a blockchain payment system in their business can easily avail its multiple benefits.

More organizations are focusing on the utility of blockchain to accelerate their business processes, reduce the cost of payment processing, add more security layers, and tackle potential business risks. Both public-private concerns pay attention to decentralized as it can take their business growth to the mainstream.

If you are looking to develop and implement a blockchain payment system in your business, get in touch with our blockchain experts.

Author's Bio

Akash Takyar in

CEO LeewayHertz

Akash Takyar is the founder and CEO at LeewayHertz. The experience of building over 100+ platforms for startups and enterprises allows Akash to rapidly architect and design solutions that are scalable and beautiful.

Akash's ability to build enterprise-grade technology solutions has attracted over 30 Fortune 500 companies, including Siemens, 3M, P&G and Hershey's.

Akash is an early adopter of new technology, a passionate technology enthusiast, and an investor in AI and IoT startups.

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Start a conversation by filling the form

Once you let us know your requirement, our technical expert will schedule a call and discuss your idea in detail post sign of an NDA.

All information will be kept confidential.