



LIGHTNING NETWORK

A layer 2 scaling solution for Bitcoin

Current concerns with Bitcoin

01

High transaction fees

During high network loads, transaction fees could grow to hundreds of dollars

02

Slow performance

Currently, Bitcoin network is able to process only 7 transactions per second

03

Pseudo-anonymous

Transactions can be tracked between interacting parties on the Bitcoin network

Results of Bitcoin's shortcomings

Slow adoption rate

Many industries currently do not see Bitcoin as a feasible way to accept payments due to its fees and performance

Niche reputation

As a result of minuscule adoption, Bitcoin has remained a niche among global currencies

What is Lightning Network?

Scalable network

Lightning Network is a scalable Layer 2 network that aims to tackle the bottlenecks of Bitcoin network and attempts to bring Bitcoin payments into everyday lives

Payment channels

Established payment channels on the Lightning Network allow people to send almost instant Bitcoin payments around the globe

Benefits of Lightning Network

01

Instant Bitcoin payments

High network throughput allows almost instant Bitcoin transfers

02

Enhanced privacy

Details of individual transactions are not recorded on Bitcoin network

03

Low transaction fees

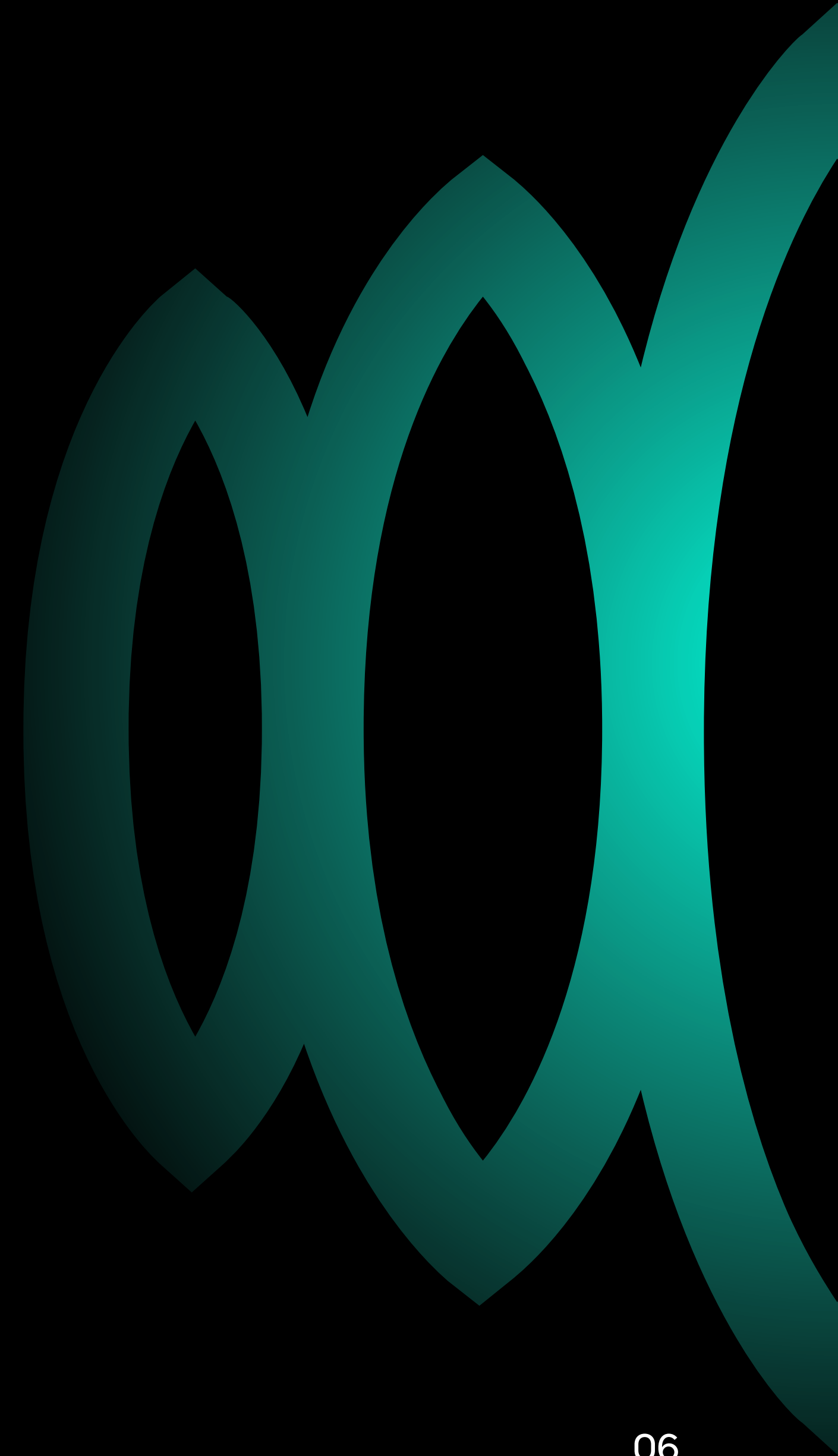
Transaction fees are almost non-existent on Lightning Network

04

Easily scalable architecture

New participants can easily join the network and contribute by setting up a node

How does it work?



01

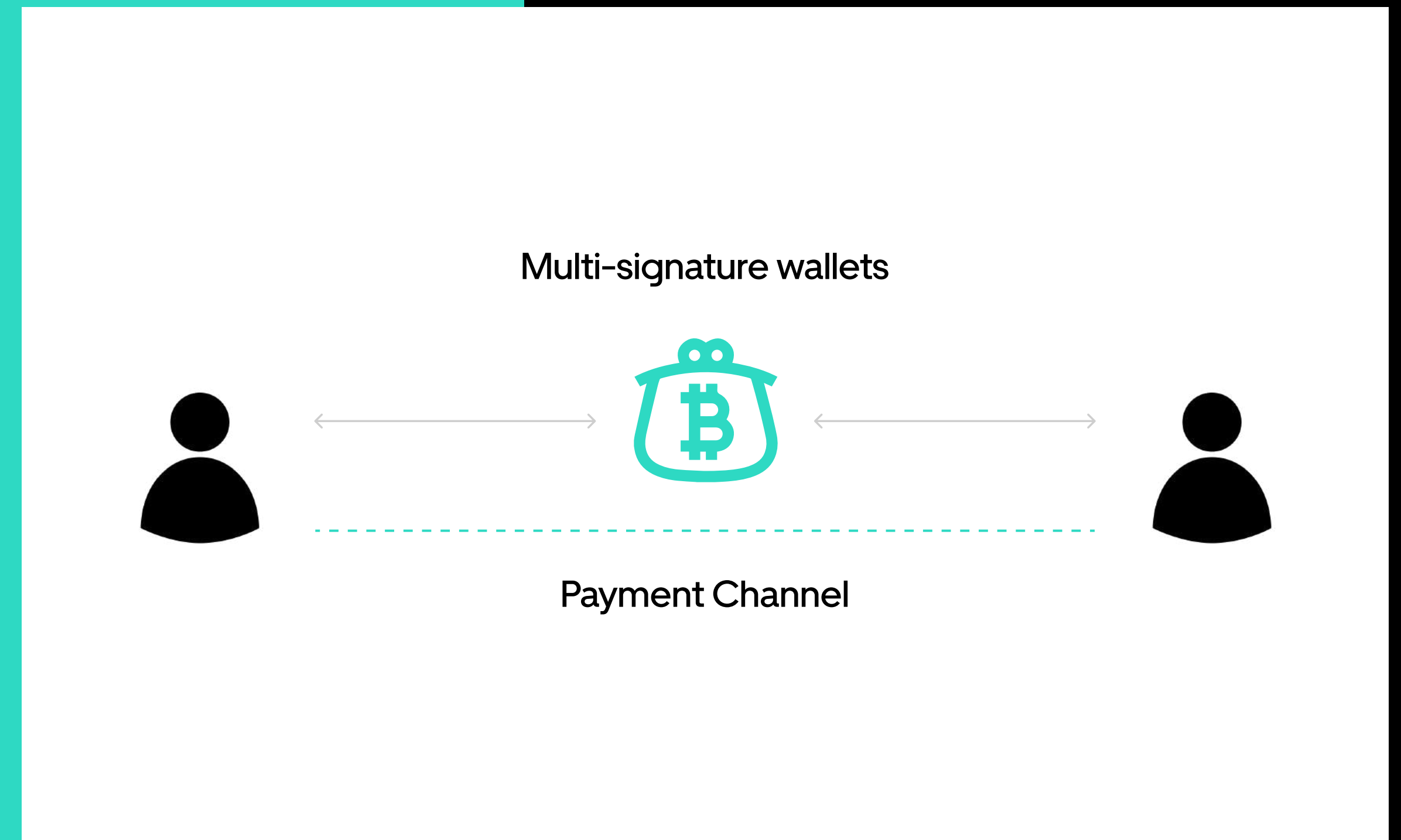
Funding transactions

Both parties set up a multi-sig wallet on Bitcoin network to send funds over Lightning Network

02

Commitment transactions

Once funds are deposited, a channel is opened for making off-chain transactions



03

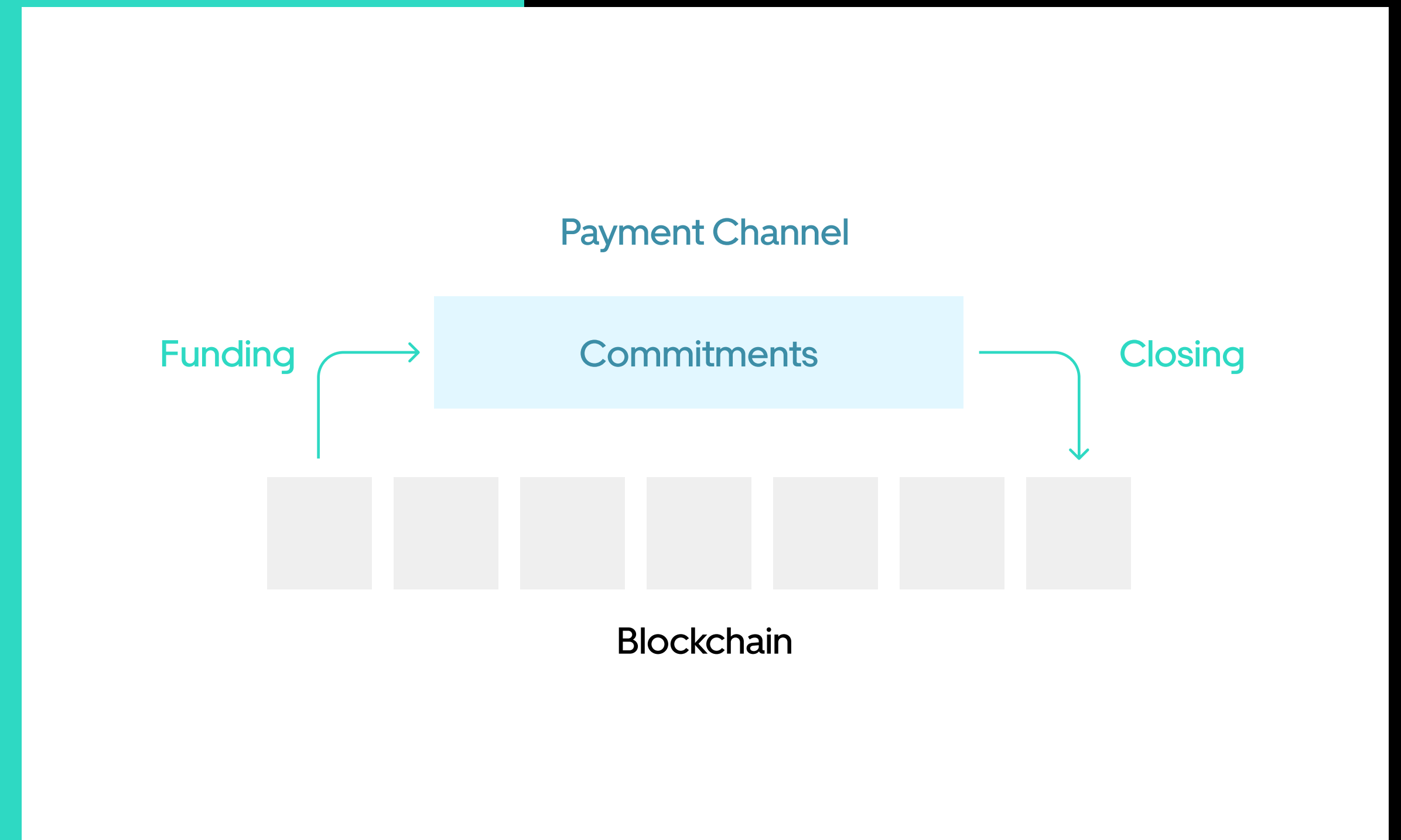
Balance sheet updates

Once a commitment transaction is made, the off-chain balance sheet is updated with new balances of both parties

04

Redemption of funds

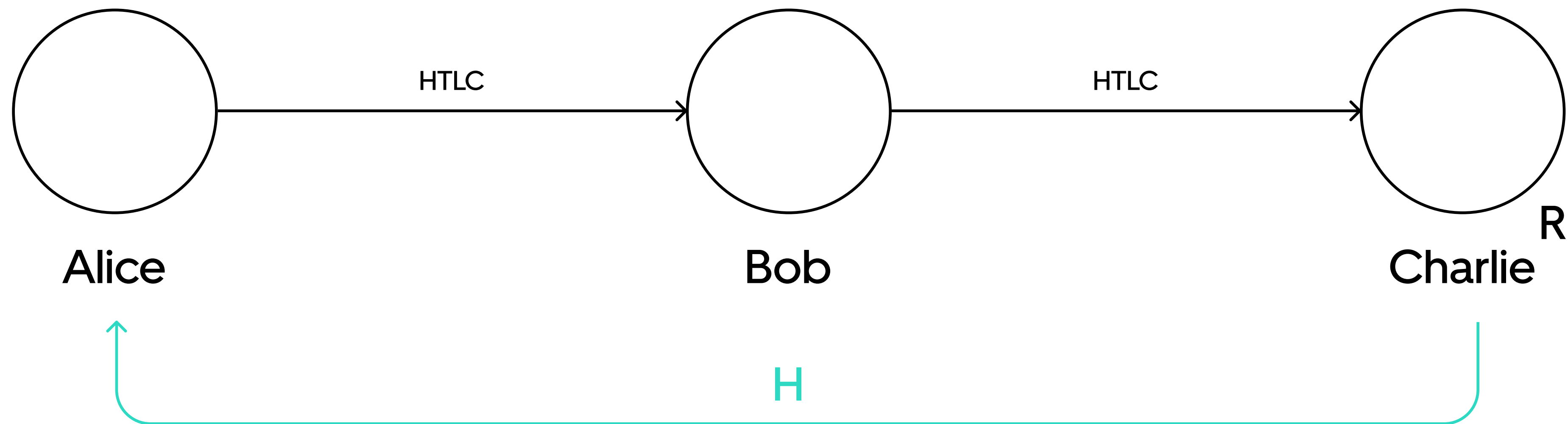
To redeem the funds, channel is closed and funds are released to the parties according to the balance sheet



Payment routing

Hash time-lock contract

Lightning Network uses HTLC to route transactions between intermediaries when no direct channel is available between two parties. Additionally, this allows node operators to earn small routing fees.





How can it be used?

Micro-payments

Subscription services

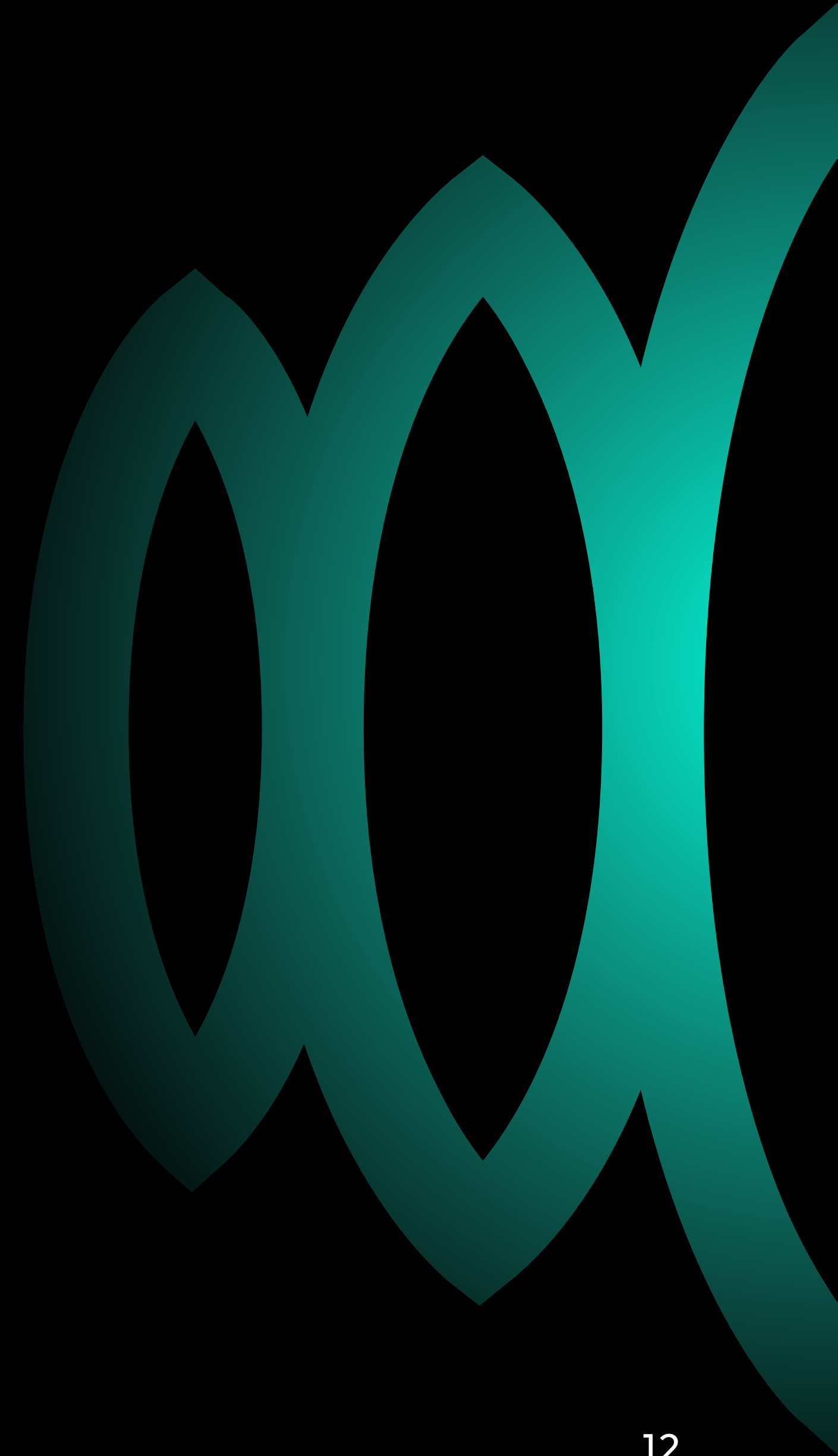
Paying for online services only when you use them is now a possibility. Lightning Network supports amounts as small as 1 Satoshi

Daily expenses

Coffee shops and bars can implement various solutions for regular clients, such as an open monthly bill

Help the network **grow**

Run a Lightning Network node at home



Run your own node

Build from scratch

One can assemble a node and run it with ease by following various tutorials [online](#). Building a Lightning Network node does not require a significant budget and is easy to set up.

Get a prebuilt node

[Prebuilt nodes](#) also exist on the market for non-technical people. They are easy to set up and run with pre-installed software.