credit /u/billycoin & www.teambitcoin.com

Bitcoin Lightning Network
Practical Use Examples

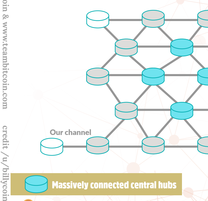
Frequent concerns

- I don't want to prefund future payments
- I don't want to lock-up funds so that I can't use them elsewhere
- I'll have to close and & reopen the channel whenever I want to replenish funds
- I have no idea in advance how many coffees I'll buy from a coffee shop

Lightning

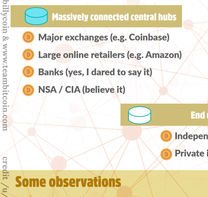
- Your regular LN channel will be just like your hot/ spending wallet
- Establishing the channel is analogous to funding a hot wallet
- You're probably not going to open a channel with any bloody coffee shops!

We already understand the concept of creating a hot wallet for regular spending ...



A single on-chain transaction establishes our LN channel with a trustless node

Let's look at how the wider established network of payment channels might be arranged



Massively connected central hubs

- Major exchanges (e.g. Coinbase)
- Large online retailers (e.g. Amazon)
- Banks (yes, I dared to say it)
- NSA / CIA (believe it)

Highly connected nodes

- Smaller exchanges
- Large retailers (e.g. Starbucks)
- Specialist providers?
- Enthusiasts?

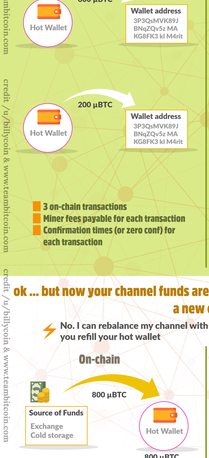
End users

- Independent retailers
- Private individuals

Some observations

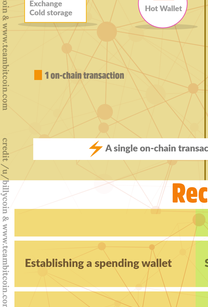
- Bilateral channels will never be necessary for End Users to be connected
- End Users will probably have direct channel connections with Central Hubs anyway
- Collusion between a number of the Central Hubs would be ineffective in disrupting the network
- Central Hubs will have no control over which payments are routed through them

Let's look at spending by making 3 separate payments from our wallet



ok ... but now your channel funds are depleted you have to close & reopen a new channel

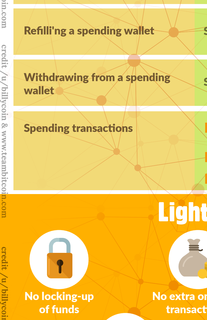
No. I can rebalance my channel with a single on-chain payment, just like you refill your hot wallet



A single on-chain transaction to provide further funds

ok, I like that. But what if I want to move some of my excess funds back to cold storage?

It's just like topping up in reverse



A single on-chain transaction to withdraw funds

Recap

	On-chain	Lightning
Establishing a spending wallet	Single confirmed on-chain transaction	
Refilli'ng a spending wallet	Single confirmed on-chain transaction	
Withdrawing from a spending wallet	Single confirmed on-chain transaction	
Spending transactions	Confirmation times Mining fees Trust less	Instant Unlimited Trust less

Lightning

- No locking-up of funds
- No extra on-chain transactions
- Unlimited, instant payments
- Microtransactions
- End user behaviour is exactly like an on-chain hot wallet