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BA/SA:

Paying your Internet, one byte at a time

With smartphones becoming more and more popular, the number of Internet capable devices is rapidly growing. But how smart is a smartphone without Internet? What happens if the user is in a foreign country, without mobile Internet access, or simply somewhere without mobile Internet coverage?

We are surrounded by wireless access points, yet we are unable to make use of them because the owners locked them down. There are two main reasons for this: liability and compensation. Without control, the owner of the AP would be held liable for actions done with his access and as the owner is paying for the access, why should you get it for free? The liability problem can be solved by only allowing VPN traffic or any other means of associating actions with the user. The compensation problem is not that easy. While we would probably be willing to pay an adequate amount for the access, we would have to contact the AP owner, reach an agreement and transfer the fund. This overhead is undesirable when only transacting a few cents.

Bitcoin is an emerging online currency that can be used to quickly and securely make transactions, even for small amounts. It allows the creation of so called micropayment channels. These channels allow the rapid and cheap renegotiation of a transaction between two endpoints without burdening the rest of the network. At the same time, we are guaranteed that we do not lose the total amount if the AP does not fulfill its part of the agreement. The goal of this thesis is to build a proof-of-concept, that would allow an Access Point to give access to untrusted users and charge them for their Internet usage.

Requirements: Good Java programming skills. Knowledge about Bitcoin and networking is advantageous.

Interested? Please contact us for more details!

Contacts

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