Research Plan for SSI Interface

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Background of the research

When you go to a website or application, chances are that you need to provide credentials to login. Think about social media or shopping sites, but also your banking or music app. The safest is to create a different password for each of these providers. However, the amount of passwords that we need to remember is getting out of hand. The internet is ever-growing and very anonymous. Self-sovereign identity solves these problems by giving users an identity that is verifiable, while still making sure that they have control over their own data. There have already been some attempts at creating a successful SSI application, but it's still not widely used. TrustChain's SuperApp is one example of such an application.

Problem description

SuperApp is still in development, but there is one problem that is already arising: Usability. There exist many application that users will not easily give up in exchange for SSI. Many users don't even know what SSI is. For an SSI application to be widely accepted and used, it needs to be easily used and not cost a lot of extra effort. This means that it should not try to replace all the currently existing application that are very popular among users, but instead integrate them into the SSI protocol. This option is currently not implemented in the SuperApp. I aim to make an OAuth like extension of the SuperApp to make sure users can access their favorite applications while still gaining the security of the SSI protocol.

Method

I only got the idea of this research in the beginning of week 2. Luckily, the papers I have read in week 1 are not completely useless as the SSI background is the same.

Papers (and other sources) read in week 1

1. Self-Sovereign Identity in a Globalized World: Credentials-Based Identity Systems as a Driver for Economic Inclusion [1].

2. A Truly Self-Sovereign Identity System [2].
3. TrustChain SuperApp [3].
4. A survey on essential components of a self-sovereign identity [4].
5. The Inevitable Rise of Self-Sovereign Identity [5].
6. Towards Self-Sovereign Identity using Blockchain Technology [6].
7. The Path To Self-Sovereign Identity [7].
8. Case Study: COVID-19 Access Control: an eID access control solution (MVP) [8].

Plan week 2

- ☑ Set-up development environment.
- ☐ Watch tutorial on Android development to get more comfortable with it.
- ☐ Create research plan for new problem statement.
- ☐ Create development plan (Scrum backlog).
- ☐

Planning of the research project

My new planning is to start development as soon as possible. I will try to create a sort of backlog first so I can track my progress throughout the project. Of course, I will first have to think of some requirements such that I can prioritize my work.

References

[1] F. Wang and P. D. Filippi, "Self-sovereign identity in a globalized world: Credentials-based identity systems as a driver for economic inclusion," *Front. Blockchain*, vol. 28, January 2020.

[2] Q. Stokkink, D. Epema, and J. Pouwelse, "A truly self-sovereign identity system," July 2020.

[3] TrustChain, "Superapp." https://github.com/Tribler/trustchain-superapp.

[4] A. Muhle, A. Gruner, T. Gayvoronskaya, and C. Meinel, "A survey on essential components of a self-sovereign identity," *Computer Science Review*, vol. 30, pp. 80–86, 2018.

[5] A. Tobin and D. Reed, "The inevitable rise of self-sovereign identity," March 2017.

[6] D. Baars, "Towards self-sovereign identity using blockchain technology," Master's thesis, University of Twente, October 2016.

[7] C. Allen, "The path to self-sovereign identity." https://github.com/WebOfTrustInfo/self-sovereign-identity/blob/master/ThePathToSelf-SovereignIdentity.md.

[8] InfoPulse, "Case study: Covid-19 access control: an eid access control solution (mvp)," April 2020.