Final Report: FOSH Literature Review

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Our project was a systematic literature review of Free and Open Source Hardware (FOSH). Since starting to look at the literature on this subject, we have learned many things.

Firstly, the field is relatively new, yet somewhat vast at the same time. The types of hardware we are considering were very limited. There have been two journals that have been started since 2017, and our project will base most of its review. This is good news for our project since it means our review is a systematic review of almost *all* the literature on this subject.

Given the new information, we have refactored and refined some of our research questions. Some questions from the proposal may be beyond the scope of a single paper to be answered, so some may be omitted altogether.

You can see a repository of our project along with a working document ?? that goes over the details here (Not finished).

Additional Key Words and Phrases: Open source design, Open source hardware

1 INTRODUCTION

1.1 Background and Motivation

The free and open source movement is defined by the following four principles:

> A program is a free software if the program's users have the four essential freedoms:
> - The freedom to run the program as you wish, for any purpose (freedom 0).
> - The freedom to study how the program works, and change it so it does your computing as you wish (freedom 1). Access to the source code is a precondition for this.
> - The freedom to redistribute copies to help your neighbour (freedom 2).
> - The freedom to distribute copies of your modified versions to others (freedom 3). Doing this gives the whole community a chance to benefit from your changes. Access to the source code is a precondition for this.
>
> A program is a free software if it gives users adequately all of these freedoms. Otherwise, it is non-free. While we can distinguish various non-free distribution schemes in terms of how far they fall short of being free, we consider them all equally unethical.

[Stallman 2015].

1.2 Research question

1.3 Scope and limitations

1.4 Organization of the paper

Then, we also need to explain why a literature review is needed. What exactly does our work add?

2 BACKGROUND LITERATURE

We will include some of the analyses that previous researchers have done on this topic. The major references are: TODO

2.1 Where is the Freedom?

We will follow the definition of Stallman[Stallman 2015], as well as expanding our research to define the "open source" in hardware

2.2 Where is the Hardware?

An overview of hardware and its difficulties is needed as good background information.

3 METHODOLOGY

The main methodology of the systematic literature review is backward propagation. We started with a seed of papers on this subject, and we checked the citations used in the seeds recursively.

Part of the methodology would also be to read through all the literature in the two FOSH journals and to record summaries, benchmarks, and the licences of the hardware they proposed. These two journals are the

(1) Journal of Open Hardware
(2) HardwareX

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Discuss the potential future developments, opportunities, and challenges that FOSH is facing as well as identify the fields where we could focus more attention on FOSH

Conclude the result we found and answer the research questions.

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REFERENCES

Richard Stallman. 2015. *Free software free society: Selected essays of Richard M. Stallman.* Vol. 3. Free Software Foundation.