

Trustworthiness of Open Source, Open Data, Open Systems and Open Standards

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I. MOTIVATION

The ubiquitous adoption of Internet technologies in almost every private, economic and social sector is overwhelming. Trust and trustworthiness are central notions in such networked environments: users accept a service in their everyday life and may be willing to pay for it only if they perceive that they can trust the service providers and the involved (software) technologies. Trust itself is the transdisciplinary result of technical, sociological and legal aspects. Trust relationships must be established, verified, monitored, maintained and, if necessary, certifiably adapted during any further evolution. To this end, trust inevitably requires formalization, best in the form of comprehensive formalized models and methods.

There has been extensive work done towards understanding and formalizing trust: trust is largely built from experience. Trust policies are used to formalize the evaluation of experiences with respect to trust. The results of trust policies are however hard to assess for software-based systems consisting of various components from different sources. It is e.g. open how to assess trustworthiness of software components or it is open how to select trust policies that result in a more successful choice of trusted software to use.

The quality of software-based systems is a major ingredients for trustworthiness. Various methods can be used to assess the quality of the related technical specifications and of the software itself. However, are quality assurance and trust policies already sufficient means for building trustworthy systems and establishing trust?

A compelling direction of improving trustworthiness of software-based systems is to open their ingredients: Open source software, open data sets, open system interfaces like open technical standards allow constructing major or up to all elements of a software-based systems. That gives means to use the wisdom of the crowd to assess and evaluate the quality, security and trustworthiness of software components. In addition, the software components can mature along a continuous feedback and revision loop with the crowd.

Still, some, but not all software components will have/use open standards, open interfaces, open data and/or open source, so that methods are needed that are able to assess a

mixture of open and closed software components. The panel will discuss where we stand in this respect and what is yet to be done towards increased trustworthiness of software-based systems that are constructed from closed and open artifacts in diverse environments.

II. OUTLINE

Issues that will be discussed include

- Relation of trust and openness
- Opportunities and threats on quality, security and reputation in relation to openness
- Trust modeling
- Quality of standards and of standardization processes
- Quality assessment of open source software
- Impact of openly shared opinions in social communities on software-based systems and their assessment

The topic of "Trustworthiness of Open Source, Open Data, Open Systems and Open Standards" will be discussed from the perspectives of

- Open source development and provisioning
- Standardization of methods and technologies
- Quality management and trust engineering of software and software-based systems
- Social community involvement

III. THE PANELISTS

The panelists on "Trustworthiness of Open Source, Open Data, Open Systems and Open Standards" are

- Esteve Almirall (ealmirall@gmail.com, ESADE, Spain): Open Innovation and Open Cities
- Minghui Zhou (zhmh@sei.pku.edu.cn, Peking University, China): Investigating Human Factors through Amassing Large-Scale OSS Repositories
- Edzard Höfig (edzard.hoefig@fu-berlin.de, Free University Berlin, Germany): Supporting Trust via Open Information Spaces
- Ina Schieferdecker (ina.schieferdecker@fokus.fraunhofer.de, Fraunhofer FOKUS, Germany): (Open) Data Quality