

# Methodologically Achieving User Trust

Bachelor's Thesis

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## Context

The research project “Inverse Transparency” examines a new form of data privacy. In short, all data accesses are allowed, but accesses are logged and made visible to so-called data owners. We define a data owner roughly as either the person creating a datum, or the person a datum relates to in content. For example, a dossier written by Sally containing personal information about Frank is owned by both Sally and Frank.

In order for this to succeed, it requires the data owners to trust in the data access logging systems. There are multiple possible avenues that could increase trust; utilizing open-source software, employing tamper-proof storage systems, limiting who can access and manipulate records, or increasing the penalties when data is accessed illegitimately.

## Goal

This thesis looks at another dimension of the trust issue. In order for users to trust the systems, the tools they interact with need to appear to them to be trustworthy. This may involve how the tools and systems are introduced to users, which information is presented on the UI, how content is displayed, how many steps the login requires, how long users have to wait for actions to complete, and even if they can access certain parts of the application or not. We limit the scope to only the user-facing tools.

This work will comprise surveying the literature, taxonomizing the results, conceptualizing a methodology to measure and improve user trust, and evaluating the methodology.

In the literature survey, existing user experience (UX) and user trust research, such as [1–4], will be researched and summarized. The most promising results will be collected and taxonomized (similar to [2, p. 647]). Based on those results, a methodology will be conceptualized to systematically measure and improve user trust and UX. This methodology should comprise of a list of steps to take, as well as techniques to employ. We aim for understanding how to make our developed user-facing tools appear trustworthy to data owners. Possible techniques could include a questionnaire or an interactive A/B test. Finally, the developed methodology will be evaluated based on its applicability and feasibility, as well as its effectiveness, e.g. by applying it to example users.

## Work Plan

1. Survey related literature on user experience and user trust.
2. Taxonomize the results of the survey.
3. Conceptualize a methodology to improve and measure user trust.
4. Evaluate the methodology.
5. Document the work in the thesis.

## Deliverables

- Source code of the implementation.
- Artifacts of the developed methodology (e.g. the questionnaire).
- Raw data of the evaluation.
- Thesis written in conformance with TUM guidelines.

## References

- [1] Bernhaupt, Regina. “Usability and user experience evaluation methods.” *Mass Customization for Personalized Communication Environments: Integrating Human Factors* IGI Global, 2010, pp. 232–243.
- [2] Bernhaupt, Regina, and Pirker, Michael. “Evaluating user experience for interactive television: Towards the development of a domain-specific user experience questionnaire.” *IFIP Conference on Human-Computer Interaction* Springer, Berlin, Heidelberg, 2013, pp. 642–659.

- [3] Grandison, Tyrone, and Sloman, Morris. "A survey of trust in Internet applications." *IEEE Communications Surveys & Tutorials* 3.4 (2000): 2–16.
- [4] Head, Milena M., and Hassanein, Khaled. "Trust in e-commerce: Evaluating the impact of third-party seals." *Quarterly Journal of Electronic Commerce* 3.3 (2002): 307–325.



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