

What is usability?

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Roadmap

- What is usability?
 - Properties of usability
 - How do usability mix with security?
- Why is usable security and privacy hard?

A definition of usability

*The extent to which a product **can be used** by specified users to **achieve specified goals** with **effectiveness, efficiency and satisfaction** in a specified context of use*

- ISO 9241

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- **Satisfaction:** Do users **like** parts of the system?

How to measure usability?

- System usability scale (**SUS**)
 - 10 multiple choice questions
 - Options are 5-point scale for each questions
 - From **strongly agree** to **strongly disagree**
 - <https://www.usability.gov/how-to-and-tools/methods/system-usability-scale.html>

Questions

1. think that I would like to use this system frequently.
2. I found the system unnecessarily complex.
3. I thought the system was easy to use.
4. I think that I would need the support of a technical person to be able to use this system.
5. I found the various functions in this system were well integrated.
6. I thought there was too much inconsistency in this system.
7. I would imagine that most people would learn to use this system very quickly.
8. I found the system very cumbersome to use.
9. I felt very confident using the system.
10. I needed to learn a lot of things before I could get going with this system.

Usable Security and Privacy

- We need to consider security / privacy and usability together
- Need to take an interdisciplinary approach
 - Security + network analytics + HCI + ...

Why is usable security different than HCI?

- We NEED to consider a threat model
 - Generally no threat model in HCI
- Usability is not enough, we also need security
 - Adversary will (try to) fool users
 - Users will behave predictably
 - Users will act under stress and make mistakes
 - Users will be careless, unmotivated, busy

Putting together Security and Usability

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System design/measurement	User studies	System design/measurement + User studies

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- **Technology change:** Users are often not familiar with changing technologies and attacks.