Indirect U2F Login
U. Tübingen, project started 2009, spin-off 2010

Advantages as compared with the common password method:
- password cannot be keylogged on end device
- password does not have to be memorized
Problems with eKaay

- Consumer Acceptance/Usability
- No Marketing
- Patent Problem

- **Security Problem**
  Secret keys are stored on the Smartphone
  → prey for smartphone thieves (to be relativized)
  → prey for smartphone trojans (a real problem)
eKaay High-Security Solution

2010 granted patent (U. Tübingen)
Example: UBS Bank offers such a login since 2013

Note that also usability improves in a certain way
U2F
(Universal 2nd Factor)

FIDO project, started 2012

FIDO: Google, Dropbox, etc.

April 2015: contactless interface (NFC,BLE)
Direct U2F Login

A card may be the more convenient U2F form factor, though of course USB is not possible with it.
Indirect U2F Login

Advantages of indirect U2F Login
- end device does need to have USB, NFC or BLE
- the user does not have to search for USB, NFC or BLE on an unknown end device

Prerequisite: Portal needs to add 2D-code plus the background software on its login page

Plan: - try to let the indirect login become an official part of the U2F project
- consider cards as an advantageous U2F form factor
- also consider cards with display, or with 12 buttons in order to type a PIN