A Multi-method Approach for User-centered Design of Identity Management Systems
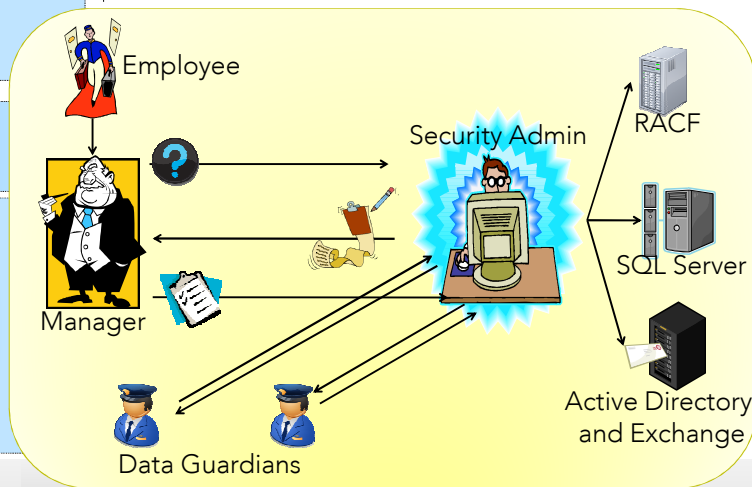
Pooya Jaferian
David Botta
Kirstie Hawkey
Konstantin Beznosov
Department of Electrical and Computer Engineering
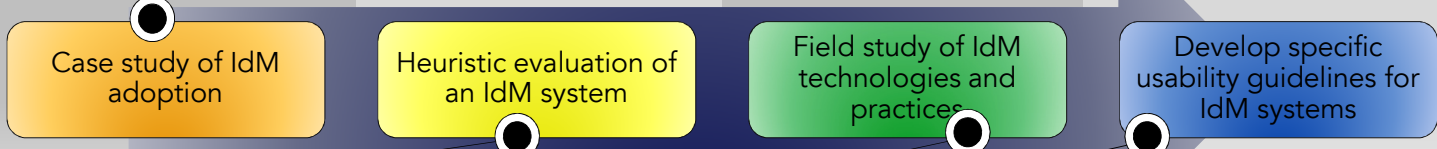University of British Columbia

Motivation

> Identity management is important to organizations.

> To improve usability of identity management tools, organizational and human factors should be considered.

A case study of IdM Adoption

> 4 semi-structured interviews
> Analysis of documents
> Study the process of IdM adoption before, in the middle and after the first phase of deploying an IdM system.

Employee — Manager — Security Admin — Data Guardians — RACF — SQL Server — Active Directory and Exchange

Methodology

Case study of IdM adoption → Heuristic evaluation of an IdM system → Field study of IdM technologies and practices → Develop specific usability guidelines for IdM systems

Usability heuristics for ITSM

Selecting heuristics related to ITSM → Refine heuristics → Evaluating an IdM system → Testing effectiveness of heuristics
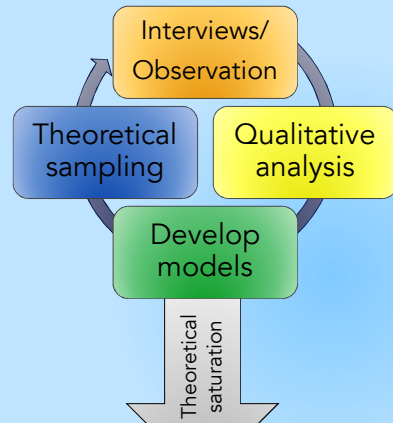
- Mechanics of collaboration
- Guidelines for designing ITSM tools
- Techniques for preventing errors in complex systems

- Interpretation of Nielsen's usability heuristics for ITSM:
An example of a heuristic "Error Prevention":
"Even better than good error messages is a careful design which prevents a problem from occurring in the first place. Either eliminate error-prone conditions or check for them and present users with a confirmation option before they commit to the action."

For ITSM tools:
> ITSM tools should facilitate the creation and use of cues and norms.
> ITSM tools can prevent errors by involving other stakeholders.
> ITSM tools can reduce errors by exposing the system at different levels of abstraction.

Future work

Interviews/ Observation — Theoretical sampling — Qualitative analysis — Develop models — Theoretical saturation

> The focus of the interviews will be on :
- different IdM tasks
- stakeholders involved
- their communication and collaboration
- the challenges in IdM

> The collected data will be analyzed using coding techniques.

> The central theme in the analysis will be tool usability.

> Based on the analysis, a set of design recommendations will be proposed.

Develop guidelines → Prototyping → Field user evaluation or survey → Refine guidelines