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# Using Recommenders for Discretionary Access Control

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# Software as a Service (SaaS)

- **Enterprises are starting to use Software as a Service (SaaS)**
  - Email, conferencing, file sharing, blogging, etc.
- **Multi-tenancy**
  - Multiple organizations use the same service
  - Inter-organization sharing easier
- **Heightened awareness of existing risks**
  - **Report: Security Worries Hinder Enterprise Plans for Social Networks**

    Half of businesses are delaying collaborative technology plans because they are concerned about security, according to a survey.

    **http://www.cio.com/article/491586/Report_Security_Worries_Hinder_Enterprise_Plans_for_Social_Networks**
  - Storing and sharing of sensitive and/or proprietary information
  - Slip-ups can have significant business impact
    - Reputation
    - Regulatory
    - Financial
    - Etc.

# Access Control in SaaS

- **Isolation**
  - Contains the problem
  - Inhibits collaboration
    - Intra-organization
    - Inter-organization

- **Access control options?**
  - Enterprise mandatory access control policies?
    - What about inter-enterprise?
  - (Usable) RBAC?
    - Who defines & manages/maintains the roles?
      - Inter-organization?
  - Discretionary access controls
    - Let content “owners” & their collaborators decide?
      - What are the risks?
  - Data Leakage Prevention (DLP)???
    - People do make incorrect sharing decisions (e.g., Good & Krekelberg)

- **Observation:**
  - People want to make rapid decisions on content sharing (discretionary a/c)
    - Traditional a/c models do not facilitate this
    - Need means for defining a/c that is unobtrusive (non-adversarial w.r.t. service)

# Recommender Systems Can Be Leveraged For A/C

- **Observations:**
  - Ad hoc work groups often define the scope of sharing
    - Implicitly defines access control for a set of sharable artifiacts
- **“Recommender systems” have previously been used to suggest sharing opportunities**
  - Observations of similar usage patterns or interests
    - Content similarity, common social networks with shared interests, etc.
- **Assumptions:**
  - Initial sharing decisions are made with greater care
  - These decisions often follow corporate policies**
- **Sharable content can be classified (NLP classifiers)**
- **Social networks are constructed from observed sharing patterns**

** Need to validate