Topika:

Integrating Collaborative Sharing with Email

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Problems with collaborative tool adoption

Reverting to email is the #1 pattern in collaboration tool adoption failure.

**Email**
Habitat. Overloaded. Flooded.
Not good for managing group work.
But embedded in work practices.

**Collaboration tools**
Good for managing group work.
Too many – hard to remember.
Requires change in practices.
Hard to get entire team using it.
How can we improve collaborative tool adoption?

Make contributing to collaboration tools part of workers’ email practice.

Email  Collaboration tools
Topika: Integrating collaborative sharing with email
Hello

Let's sit down next week to discuss developments with Topika. This sounds like a cool idea. I talked with our sales team, and they are interested to see the system. Talk to you soon.

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Topika design principles

Goal:

- Let people continue with their standard email habits, but also exploit the benefits of collaborative tools.

Design requirements:

- Minimal modification to the email client.
- Leverage functionality of dedicated collaborative tools.
- Minimal additional cognitive overhead.
Topika system

- Minimal client-specific modifications:
  - email composer
  - ability to post to collaboration tool

- Suggestions computed via similarity function: compares email being composed to user’s shared spaces (weighted comparison using TF-IDF algorithm):
  - people: email recipients & shared space people
  - subject-title: email subject & shared space title
  - subject-keywords: email subject & shared space keywords
  - body-title: email body words & shared space title
  - body-keywords: email body words & shared space keywords

- ‘Work profile’ facilitates comparisons: mine and index user’s shared spaces within different collaboration tools, storing their title, people, and keywords.
Topika suggestion algorithm evaluation

Data set: 12 users categorized 1237 emails into relevant collaboration spaces
  - Emails could have multiple categories (11% did)
  - 65% were uncategorized

Setup: Evaluated recall and precision (standard metrics)
  - 50% of emails used for training, 50% used to evaluate Topika.
  - K = # of suggestions (K was varied from 1 to 10)
Results

Were the right collaboration spaces suggested? (recall results)
Results

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- 73% of correct suggestions (on average for all values of K)
- Combining all similarity metrics led to best results
Results

How noisy were the suggestions? (precision results)
Results

How noisy were the suggestions? (precision results)

- 69% of suggestions were correct (on average for all values of K)
- Most accurate suggestions were given by
  - subject-title (31% false positives)
  - combining all similarity metrics (37% false positives)
Results

How many suggestions are best for both accuracy and noise?
Results

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- 6 suggestions (leads to 68% harmonic mean of precision & recall)
Results

Does user collaboration pattern matter?
Results

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- Yes! Similarity metric importance varied:
  - *people*: users who work with different people across shared spaces
  - *subject-title*: users who work with the same people across shared spaces
Thank you!

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