The Myth of Find: User Behaviour & Attitudes to Within-Document Search

Fernando Loizides, George Buchanan,
Future Interaction Technology Lab,
Swansea University
Not in New Zealand

- First "Area of Outstanding Natural Beauty" in the U.K.
- Still wet…
Motivation

• Simple, predictable tool
• Users report a high use of the within-document search features of Acrobat
• Also listed as a key advantage of working digitally
Motivation

• The tool is also naïve
  – Literal matching
  – Matches made (and navigated through) in document order
  – Doesn’t work on (many) scanned documents

• Users actually don’t use it often!
  – And use it naively (often first hit only)
Agenda

• Three User Studies
  – 3 x 10 users in a laboratory setting
  – Diary study of 8 information intensive users
  – Expert review, by 8 HCI/IR experts

• Findings
• Future Work
• Conclusions
User Study #1: Laboratory

• Set of 20 documents
• Three conditions (Paper based, Electronic folder, Results list)
• Post-experiment interview for qualitative feedback
• Observation via screen capturing software and video camera
User Study #2: Diary

- 8 participants (multiple disciplines)
- Initial semi-structured interview, with some directed questions
- User recorded actions for a period of one to 4 weeks.
- Intermediate interview.
- Final interview
- Total of 35 searches performed.
Study #3: Expert Review

- 8 experts in computer science.
- Presented with the limitations of Ctrl-f and given a prototype replacement to try.
- Asked to perform searches with both systems to establish preference and performance.
Findings

• 41/46 consider Ctrl-F a ‘key advantage’ in electronic searching and claim to use it.

• Only 4/20 used Ctrl-F in Study #1.

• Every participant in the diary study commented of the advantages of Ctrl-F
  – But only after a direct questioning.
Findings

• No diary study participant reported using Ctrl-F

• After specific questioning:
  – 2 mentioned using it but not sure when
  – 1 said he may have used it
  – 5 said they did not use it at all

• One participant noted that they had never used Ctrl-F before.
Wider Findings

• Behaviour seems very similar to naïve web tactics
• Overwhelming reliance on using the internet to search (high trust of search engine)
• Few pages opened and seldom thoroughly scrolled.
SmartFind

- Simulates sections slightly bigger than paragraphs.
- Allows for the searching of individual queries rather than exact matching.
- Uses stemming
- TF x IDF scoring gives most relevant section first.
- Highlights results.
Expert Review

• Positive responses to new features
  – 7/8 giving consistently higher ratings
• More similarity to traditional Ctrl-F interface required (by 4/8)
• Use of a separate (within-doc) results area recommended
Future Work

• Advanced within-document searching prototype introduced
• Develop SmartFind further
• Strong need for further investigation of user and attitudes in document triage
Conclusions

• Discrepancy between self-reported and actual behavior.
  – 3 different user studies
• Ctrl-f considered ‘key advantage’
• Rarely used and with little success
• Limitations and shortcomings manifest
• [ww.greenstone.org](https://www.greenstone.org)
Questions?

Thank you

Fernando Loizides

http://www.cs.swan.ac.uk/~csfernando/

csfernando@swansea.ac.uk