Routing Indices For Peer-to-Peer Systems

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Outline

- The Problem
- Approaches
- Fundamental Issues
- Drawbacks of the 3 RI schemes
- General Criticisms
- Presentation Criticisms
- Future Work
- Conclusion
- Questions
The Problem

- Efficient searching mechanisms in peer-to-peer networks
- Peer-to-peer today
  - Heterogeneity
  - Large-Scale

Approaches

- Traditional Approach
  - Centralized index (e.g. Napster)
  - Flooding the network (e.g. Gnutella)
- New Approach
  - Routing Indices (distributed)
  - Queries sent to “best” neighbours
  - Sequential searching
😊 Fundamental Issues 😞

- Inaccurate or suboptimal solution
- E.g. threshold = 10, query = DB & Lang
  B contains required document

😊 RI Drawbacks 😞

- Compound RI
  - Doesn’t take hop count into consideration
- Hop-count RI
  - Higher storage & transmission cost
- Exponential RI
  - Potential loss in accuracy
⚠️ RI Drawbacks (cont’d) ⚠️

• General
  – Over-counting
  – Under-counting

• How to deal with issues?
  – Hybrid RI mentioned but no details or ref.

• Are the still efficient?

😊 General Criticism 😊

• Summarization to reduce storage cost
  – Implications on errors?

• Techniques for dealing with cycles
  – Message overhead?

• Evaluation using resource cost model
  – User metrics also crucial
  – Comparison with Gnutella & flooding technique rather than just no-RI?
😊 Presentation Criticisms😊

• Evaluating P2P search mechanisms
  – No references or details on research conducted (sect. 7.2 – incr. Threshold)
• Too many calculation and spelling errors
  – Lack of attention to detail
  – Error in calculating value for C in sect. 4.0
  – Undefined parameter t in sect. 4.1
  – Figure 5a & 5b – incorrect content categories
  – Error in # of DB documents in sect. 5.1

😊 Future Work😊

• No direction for future work
• Hybrid (compound/hop-count) approach ?
Conclusion

- Some novel approaches presented
- Need to pay attention to detail
- Provide better comparisons
- Clarify research sources

Questions ??