

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

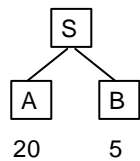
- Efficient searching mechanisms in peer-to-peer networks
- Peer-to-peer today
 - Heterogeneity
 - Large-Scale

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 they 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 ??