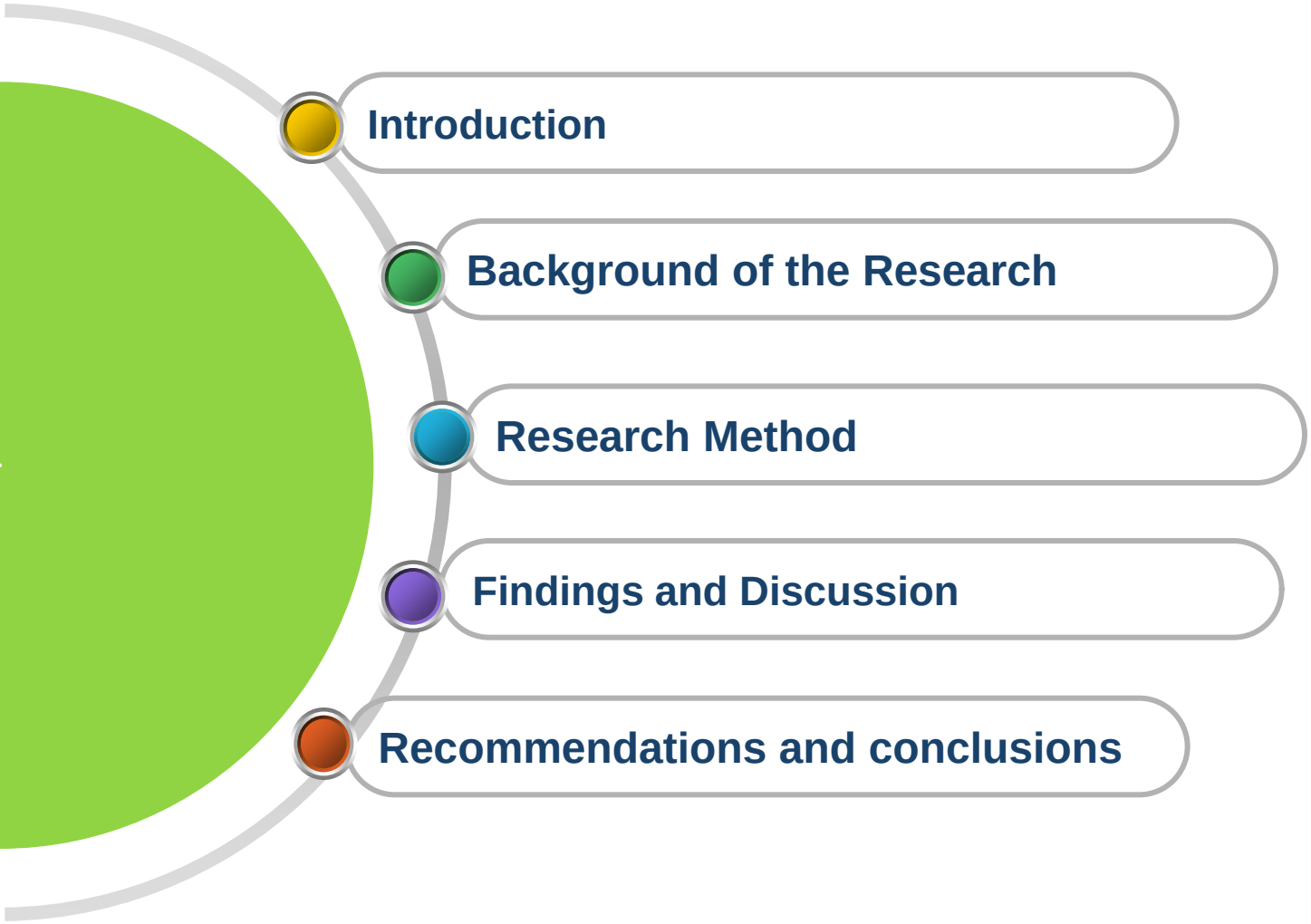
Perceived Quality of Cloud Based Applications for Collaborative Writing

Tihomir Orehovački

University of Zagreb, Croatia
Faculty of Organization and Informatics
tihomir.orehovacki@foi.hr

Agenda


Introduction
Background of the Research
Research Method
Findings and Discussion
Recommendations and conclusions

Web 1.0 vs. Web 2.0

- Web 1.0
  - static Web pages
  - only persons with a substantial ICT knowledge were able to create Web sites and publish information online
  - users were just passive consumers and information recipients
- Web 2.0
  - social Web
  - the core idea is harnessing collective intelligence

Models of social paradigm

- ✓ Service Oriented Architecture (SOA)
- ✓ Cloud Computing (CC)
- ✓ Software as a Service (SaaS)

Collaborative editors

- ✓ cloud based Web services
- ✓ replacement for standard "office" applications
- ✓ advantages:
  - ➢ efficient formatting and editing of the content
  - ➢ simultaneous work on the same document,
  - ➢ they contain information about who created a document and when
  - ➢ this type of applications includes a number of add-ons such as live chat, live markup and annotation etc
- ✓ have a potential to be used for both professional and educational purposes

Research challenges

- some of the major concerns are related to
  - security
  - privacy
  - trust
  - scalability
  - reliability
  - quality of service
- implementing the principles of Web Engineering is proposed as a possible response to these challenges
- research was conducted with students who used collaborative editors to perform educational e-activities

Web 2.0 applications quality evaluation

- ✓ within a conceptual model, quality attributes were classified into six basic categories:
  - system quality (SYQ)
  - service quality (SEQ)
  - information quality (INQ)
  - performance (PFM)
  - effort (EFO)
  - acceptability (ACP)
- ✓ based on their theoretical similarities, quality attributes were categorized into one of the six proposed dimensions

Research Method

- ✓ the experiment consisted of subjective quality assessment of four different cloud based applications (*Google Docs*, *Zoho Notebook*, *iNetWord* and *Helipad*) that can help in the implementation of collaborative educational e-activities
- ✓ during the study, which lasted an entire semester, students used collaborative editors to complete four e-activities
- ✓ in order to better assess their quality and determine their advantages and disadvantages, students used a different collaborative editor for each e-activity
- ✓ at the end of each e-activity, students expressed their critical opinions, including the advantages and disadvantages of the collaborative editor used while performing the e-activity (retrospective thinking aloud method)
- ✓ at the end of the semester, students completed a questionnaire ((five-point Likert scale) assessing the quality of all the four Web 2.0 applications

Findings

- ✓ the study involved undergraduate students of Information Science
- ✓ at the time when the experiment was conducted, participants were in the second year of study
- ✓ all of them used Web 2.0 applications on a regular basis
- ✓ according to the results obtained from the questionnaire, only the availability and security attributes were assigned high values
- ✓ the mean value ranged between 4.92 and 4.56 for the security attribute and between 4.73 and 4.18 for Web application availability

Recommendations

- ✓ list of the attributes most frequently mentioned by the respondents in the context of advantages and disadvantages of used collaborative tools:
  - Satisfaction
  - Usefulness
  - Ease of use
  - Effectiveness
  - Reliability
  - Aesthetic
  - Customizability
  - Familiarity
  - Interactivity
  - Navigability

Conclusions

- ✓ the results of our research showed that users placed a greater emphasis on subjective than objective quality attributes
- ✓ while thinking aloud, users did not mention the attributes *consistency* and *memorability* even once
- ✓ three quite important attributes were often mentioned and they may be added to future versions of our questionnaire:
  - scalability
  - compatibility
  - interoperability

Future work

- ✓ will be focused on the implementation of Web 2.0 applications to other types of educational e-activities
- ✓ we will test an improved new questionnaire in the area of e-commerce
- ✓ to improve the applicability of the proposed set of quality attributes and assessment methodology, research will be extended to include domain experts
- ✓ by using automatic tools for usability evaluation, we will gather data concerning the objective attributes that will surely enrich and complement the presented results

Thank you for your attention !

tihomir.orehovacki@foi.hr