An In-Depth Comparison of Different Software-Based Discussion Mechanisms for Group Decision Support Systems

Nalini Chawla 0509858 MSc Business Information Systems, Supervisor Dr Antony Brown

Introduction

The discussion stage in Group Decision Support Systems allows disagreements to be resolved where possible. The effectiveness of different discussion mechanisms is a very and surprisingly overlooked area of research, despite how critical it is.
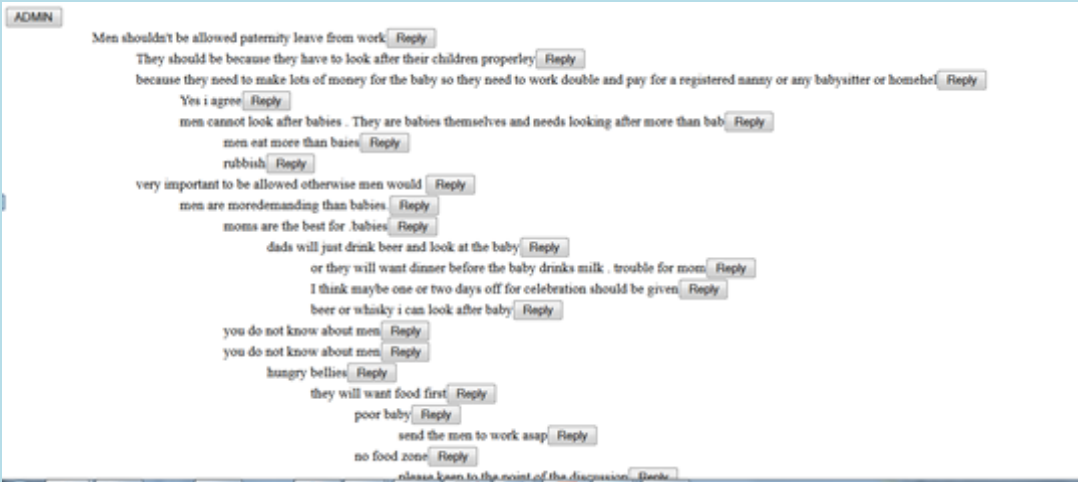
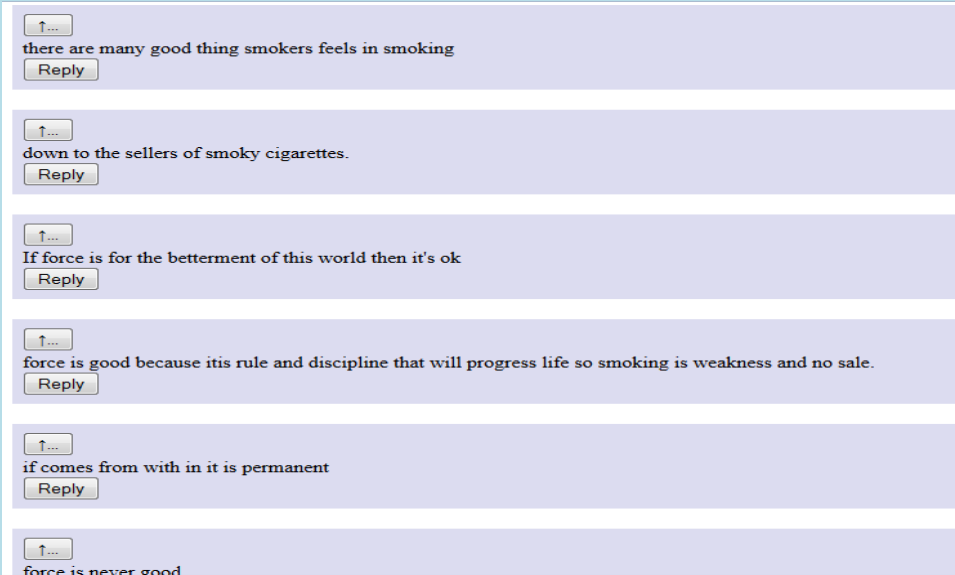Figure 1: Nested (tree-structured) discussion that took place

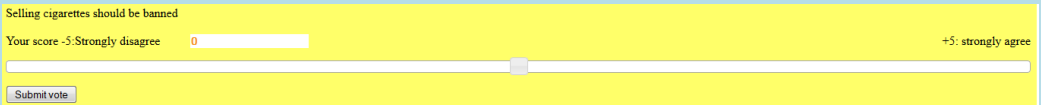Figure 2: Most recent opinion at top discussion that took place

Figure 3: -5 to +5 score vote slider, appearing every 5 minutes (to gauge opinion changes)

Aims and Objectives

- Develop 2 different popular variants of discussion system.
- Test them in groups along with a verbal discussion as a control, with my self-implemented online voting system, with the aim to finely measure opinion changes over time.
- Evaluate and present the results of my experiment.

Background Investigation/research

Current discussion systems vary in very fundamental ways. Among them are the order in which comments are presented, their overall structure, and the speed at which conversations can take place. YouTube, Stack Overflow and mailing lists are just a handful of systems which differ fundamentally in how conversations are conducted.

The methodologies and technologies

Node.js on the server-side with express module. JQuery on the client-side. Mongodb database. Socket.io for live communication and updates.

Online voting every 5 minutes in discussion for 20 minutes in groups of 3.

Results achieved and evaluation

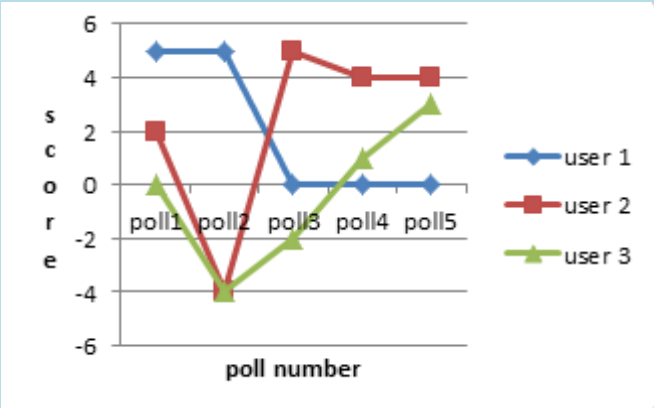Figure 4:Tree-like discussion chart showing change of opinion through 5 polls.

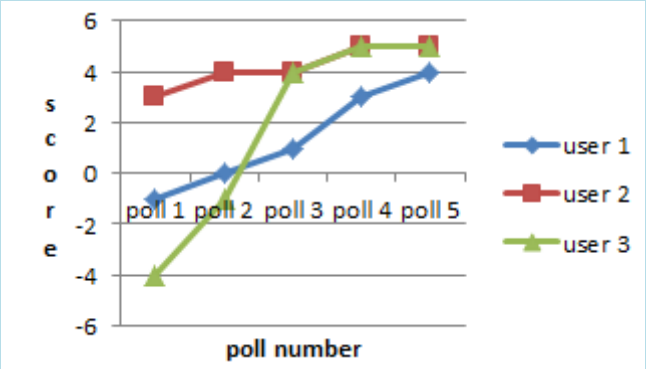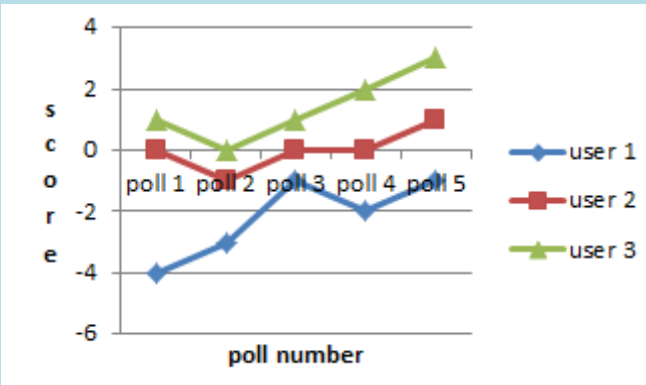Figure 5: System with the most recent comment at the top

Figure 6: Round table (verbal) discussion (control group)

Linear most recent comment at top discussion showed greatest convergence of opinion. The tree-structured discussion showed the greatest speed of change of opinion. The control group showed the least change of opinion.

Conclusion

The software developed serves as a great starting point and platform for further research into the effectiveness of different discussion system.

Key references:

Stackoverflow. Available at: http://stackoverflow.com/ (Accessed 20 July 2013))

MARRA, ROSE M. ET AL (2004) *Content Analysis of Online Discussion Forums: A Comparative Analysis of Protocols.* Available at: http://scholar.google.co.uk/scholar?hl=en&q=discussion+forums&btnG=&as_sdt=1%2C5&as_sdtp= edn (Accessed 7 August 2013)