COLLAGREE: Facilitator-mediated Large-scale Consensus Support System

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1. INTRODUCTION

Internet-based direct democratic discussion has received much attention and will probably be one of the next generation methods for open and public citizen forums. Such forums require systematic methodologies that can efficiently achieve consensuses, reasonably integrate ideas, and avoid flaming. We developed an open web-based forum system called COLLAGREE that has facilitator support functions and deployed it for an internet-based town meeting in Nagoya, Japan as a city project led by its mayor. COLLAGREE is derived from COLLective or COLLaborative and AGREEment. This abstract shows its implementation and preliminary results about an actual field experiment in a city project.

The following representative projects inspired us to enter this area. Climate CoLab [Introne et al. 2011][Malone et al. 2009] [Malone and Klein 2007] is one of the most well-known, web-based collective intelligence projects. Its goal is to harness the collective intelligence of thousands of people from all around the world to address global climate change. Like Wikipedia and Linux, MIT CCI has developed a crowdsourcing platform where citizens work with experts to create, analyze, and select detailed proposals about climate change. This system is comprised of the following steps: proposal creation, finalist selection, proposal revisions, voting, and presentations to potential implementers to integrate innovative opinions to crystalize implementable ideas.

Deliveratorium [Gurkan et al. 2010] [Landoli and Klein 2007] [Klein 2007] is another project where people submit ideas by argumentation maps, which are a discussion structure through which people shape their ideas. With structured argumentation maps, deliveratorium clearly shows all the relations among ideas and opinions. Such structuring can be done even when the opinions are completely divided.

In COLLAGREE, people can submit their opinions as a chunk of text as in ordinary forums on Facebook or Twitter, and facilitators can submit their own instruction messages to participants. We believe that people are more used to submitting just messages. Also, theoretically no voting can make democratic decisions under some assumptions. In practice, persuading people by voting is not easy. Thus, we want discussions that can be adequately led by facilitators so that many people can be persuaded to accept the final decision. In fact, real-world workshops or town meetings among citizens are usually coordinated by a facilitator who coordinates, leads, integrates, classifies, and summarizes discussions to reach good consensuses or alternatives.

The main issue is how to support facilitators so that they can manage large-scale discussions. In our experiment, professional facilitators joined our project to harness internet discussions with over 100 people. COLLAGREE provides support functions for facilitators. For example, using text-based sentiment analysis [Turney 2002], our system automatically judges the degree of agreement on one message.

This project was a collaborative effort among the following interdisciplinary research groups: a city planning division, a design/architecture division, and a computer science division. The city planning division created a role to collaborate with Nagoya. The design/architecture division provided a very ef-

fective interface design of our system. The computer science division developed, deployed, and operated the software system.

The rest of this extended abstract consists of the following sections. In Section 2, we outline the COLLAGREE system. In Section 3, we present a large-scale experiment in Nagoya and some preliminary results. Section 4 is the concluding remarks.

2. COLLAGREE

Town meetings among people are often coordinated by facilitators who coordinate, lead, integrate, classify, and summarize discussions to achieve fair consensuses or alternatives. Facilitators play a critical role in such town meetings and workshops in the real world. However, their burden to harness discussions is huge because the number of participants in internet discussions is increasing. Thus, in COLLAGREE, we provide functions that can support facilitators.

Fig. 1. User interface

Figure 1 shows a typical user-interface used by both facilitators and participants. The following are its typical functions, and we especially adopted ①, ②, and ③ to support facilitators. ① Agreement or disagreement analysis for a comment is shown. Facilitators can understand whether a discussion thread is positive or negative. ② Highlighted keywords so that facilitators can understand what keywords are being focused on and which are important. ③ Facilitation tab from which facilitators can input their instructions to participants. ④ Searching and reordering opinions and discussions. ⑤ Issue tags that participants can add to each opinion and comment so that they can search for it afterwards. ⑥ E-mail reminders for participants as well as reminders when related events happen.

3. LARGE-SCALE EXPERIMENT IN NAGOYA

Nagoya in Aichi Prefecture has over three million people. After three months of preparation with its city officers, we created an internet-based town meeting about the cityfs planning. Mayor Takashi Kawamura announced this project in newspapers and on TV (Fig. 2 left) as one actual town meeting of the Nagoya Next Generation Total City Planning for 2014-2018.

Our experiment ran on COLLAGREE system during a two-week period from 12:00 on Nov 19, 2013 to 12:00 on Dec 3, 2013 with nine expert facilitators from the Facilitators Association of Japan. The

Press conference by Mayer of Nagoya city, Mr. Takashi Kawamura

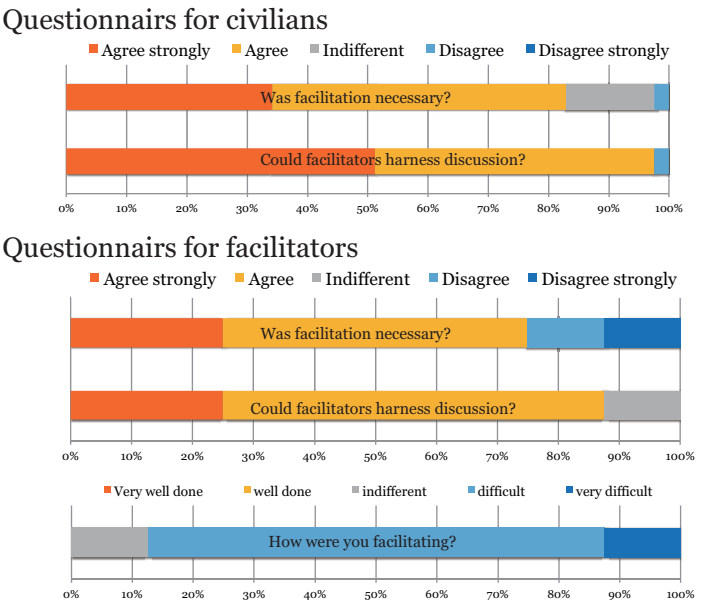

Fig. 2. Press conference (left) and preliminary results (right)

participants discussed the following four categories about their ideal city based on the Nagoya Next Generation Total City Planning 2014-2018: a town where human rights are respected and everyone lives happily; a town resistant to disaster where people can live safely; a town with a comfortable urban environment in harmony with nature; and a town with vitality and charm.

As preliminary results over the two weeks, COLLAGREE gathered 266 registered participants, 1,151 opinions, 3,072 visits, and 18,466 views. The total of 1,151 opinions greatly exceeded the 463 opinions obtained by previous real-world town meetings. The questionnaire results are shown on the right of Fig. 2. Both participants and facilitators realized the importance. However, facilitators had difficulty managing such large-scale discussions because this was their first experience.

4. CONCLUSION

We developed an open web-based forum system called COLLAGREE that has facilitator support functions and deployed it for an internet-based town meeting in Nagoya, Japan as a city project. Our preliminary results demonstrated that COLLAGREE successfully gathered many more opinions than comparable real-world town meetings and people accepted the importance of facilitators. Future work will create more effective facilitation support.

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