An ICGA evaluation function

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As the new President, my priority was to assess the current state of the ICGA, and see if the organization was moving in the right direction. This was the motivation for a survey that was distributed in October 2019. To the best of my knowledge, there has not been an ICGA member survey before. I had no expectations on what information might be gleaned from this information-gathering exercise.

The survey consisted of 11 questions, some of which had sub-parts. The survey questions were around membership profile (Questions #1 and 11), ICGA Journal (#2), Computer Chess Tournaments (#3), Computer Olympiad (#4), game-AI conferences (#5), ICGA web site (#6), attracting new members (#7), funding (#8), possible partnerships (#9), and volunteering (#10).

Each question had one of three possible responses:

• Single selection (choose the response most appropriate);
• Multiple selection (choose all applicable responses); and
• Comment (free form text).

In the following discussion of the survey results, two simplifications are used:

• All percentages are rounded to the nearest integer value.
• For text answers, usually only points raised by two or more respondents are mentioned. Numerous excellent suggestions were made (and may be acted on), but it would considerably lengthen this article to mention them all.

The survey was sent to 206 individuals/organizations, including all current ICGA members as well as recent former ICGA members for whom we had an email address. Some of these addresses were invalid, resulting in 194 requests for which we might get a response. In the end, 41 submissions were received via the online survey form, and an additional 4 by email. Of the 45 responses, 75% were from current members, and 25% from former members. Thus the response rate was $\frac{45}{194} = 23\%$, quite good by the usual survey standards. Thank you to everyone who responded.

MEMBERSHIP

Almost 90% of the respondents are/were ICGA members for five or more years. Further 67% were age 50 or more and 33% were age 30-49 (no respondent was under the age of 30). 48% work for a university or college, while 30% are professional software developers (non-game related), and 5% are professional game-software developers.

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The above numbers are worrying, as they suggest that the ICGA is not attracting new members. A healthy organization should be growing, and at the very least adding new members each year to counter attrition. However, the ICGA membership is slowly shrinking. An analysis of new memberships over the past five years indicates almost all of them come from participants of ICGA events.

The survey had a positive result, in that it reminded a few people that they had forgotten to renew their membership.

Several members requested that the renewal process be simplified. We will examine it to see how it can be improved. At the very least, subscription information should be readily available on the ICGA website (it currently is not!).

ICGA JOURNAL

It was reassuring to find out that many members read most of the Journal. For each of the three sections surveyed (research papers; notes and short papers; tournament reports), 65% of respondents said that they always or often read that content.

When asked about the possibility of adding additional content to the Journal, numerous excellent suggestions were made, including:

- Survey papers;
- Linking to and providing summaries of relevant game-AI literature that has been published elsewhere;
- Researcher profiles;
- Opinion pieces (other than from the Editor); and
- Retrospectives (50 years of progress to distill and analyze).

Several people felt that the ICGA was too limited in the range of games it supported and that there were benefits to widening the scope (in the ICGA Journal, and also for competitions).

COMPUTER CHESS TOURNAMENTS

The ICGA tries to hold three annual world computer chess championships: unrestricted (no hardware limitations), software (all programs use the same hardware), and speed chess. 20% of respondents have participated in at least one ICGA computer chess tournament, while 60% have attended at least one event.

Given that computers have superhuman chess strength, it is often asked whether there is value in continuing to hold computer-chess competitions. It is important to put these events in perspective. The first computer chess tournament was held in 1970, and there have been annual competitions ever since. These events have been a valuable tool for benchmarking progress, exchanging ideas,

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1The Association for Computing Machinery (ACM) hosted an event every year from 1970 to 1994. The triennial World Computer Chess Championship began in 1974 and eventually moved to an annual event. There were a few years without an ACM or ICCA/ICGA event, but other organizations filled the void.
and evaluating implementations. Undoubtedly, these competitions played a pivotal role in the rapid progress made in building high-performance chess programs, leading to the 1997 DEEP BLUE victory. This is the longest ongoing experiment in computer science history.

It was a pleasant surprise to see that 55% believe that computer chess tournaments should continue (32% said maybe and 13% said no). Comments on the chess events included:

- Should be replaced by online events (where hundreds of games can be played, allowing for statistically significant results – such as done by TCEC, the Top Chess Engine Championship).
- While there is value in face-to-face competition (the exchange of ideas has been a powerful catalyst for program advances in the past), the ICGA should be realistic as it is an expensive event to be putting on annually.
- Increase awareness by having real-time updates of the games (or even a live stream).
- Partner with a big organization (company; conference) that has the infrastructure for these events (e.g., facilities, computing resources).

OLYMPIADS

The Computer Olympiads have been around for 30 years. David Levy conceived of the idea to allow for annual competitions for more games. Over time, the variety of games has changed considerably, as some games have disappeared from the event (solved; superhuman; lack of interest), while others have appeared (new variants; wider scope of interest; interesting AI challenges).

60% of respondents have been a participant in at least one Computer Olympiad, while 80% have attended at least one event. Given that 13% have participated in only one Olympiad, this again suggests that the Olympiads are an important source of new members for the ICGA. 83% of respondents think the Olympiads should continue, 13% said maybe, and 4% said no. Comments on the Olympiads included:

- Have all the Olympiad programs run on a common platform, allowing for the automation of the tournaments.
- Concentrate the event on fewer games, but have more entries for each event.
- Provide “starter kits” for some of the games, so that those interested in writing a program do not have to start from scratch.
- Increase the number of competitors. Note that for the most recent Olympiad, there were 103 entries, but only 34 unique competitors.

CONFERENCES

Since 1989, there have been (almost) annual ICGA-sponsored conferences: Advances in Computer Games and International Conference on Computer Games. 52% of respondents have been an author/co-author on at least one paper published in these conferences. 71% of respondents have attended at least one of these conferences. 83% of respondents think the conferences should continue, 13% said maybe, and 4% said no. Comments on the ICGA conferences include:

- Competition: lots of game-AI conferences/journals these days. Collaboration/co-location with these publication venues should be considered.
• Widen the scope of games considered as a way of increasing attendance at and interest in these conferences.
• Having two conference series dilutes the value of each.
• For the past two years, the ICGA has co-located its annual events with the International Joint Conference on AI (IJCAI). In 2019, IJCAI was in Macau and 2020 will be held near Tokyo. Concern was raised that these are not ideal locations for many potential participants.
• Need to do a better job of advertising the conferences.

ICGA WEB SITE

Several members raised concerns to me about the ICGA web site, which promoted the inclusion of this question in the survey. Over the past year, 68% of members said that they occasionally visited the web site, with 8% saying often, and 25% responding not once. For those who do visit the site, all the main areas of information seem to be visited often (ICGA Journal; Conferences; Chess competitions; Computer Olympiad; ICGA Archive).

The survey made suggestions for expanding the content of the site:
• Information about different computer games: 76% in favor.
• Information on open source code for various games: 70% in favor.
• A beginner’s guide to writing a game-playing program: 73% in favor.
• History of game-AI: 84% in favor.
• Research advances arising from game-AI research: 81% in favor.
• Resources for using game-AI in high school or university courses: 57% in favor.
• Links to various game-AI resources: 78% in favor.

While all of the above items will add value to the ICGA web site, it will take a lot of effort to do a good job. The ICGA is a volunteer-run organization, and we will need help to accomplish this.

Additional comments include:
• Do a thorough examination of the site and fix problems (e.g., broken links; outdated material).
• Make the website the focal point for (frequent) online competitions (e.g., Olympiad games).
• Add a forum for people to meet, chat, and exchange ideas.
• Reorganize the site (involve a professional web designer).

GROWING THE ICGA MEMBERSHIP

The ICGA has annual costs if it is to maintain the current level of activity. The membership fees are not enough for the ICGA to break even, nor do the chess/Olympiad/conference events make money (in fact, they lose money). Thus, without more members the ICGA is not financially sustainable in the long term. Hence, respondents were asked about ideas for growing the number of members (this section) and ways to increase funding to the ICGA (next section). Suggestions for addressing the membership problem included:

• Widen the scope of games of interest to the ICGA (e.g., video games; esports; economic games).
• Ask other AI organizations to link to the ICGA site.
• Increase the ICGA’s presence in social media.
• Various suggestions for reduced cost membership (e.g., undergraduate or graduate students). Note that the ICGA membership was recently lowered to only $20/year (with online access to the ICGA Journal). It seems unlikely that membership fees are a barrier.
• More game competitions, especially online. Be aggressive at advertising these competitions.
• Redesign the ICGA web site and add more content to it.

ICGA FUNDING

The ICGA has been fortunate to have had many generous sponsors in the past who have contributed to our organization’s activities. We are very appreciative of their support!

In this survey question, we asked about ideas for raising funds for the ICGA. While there were numerous responses to this question, none of them are likely to have an immediate result. For example, many people suggested finding a corporate sponsor and even suggested the names of companies to approach. As someone who has done a lot of fund-raising (in my previous role as Dean of the Faculty of Science at the University of Alberta), I know how hard it is to be successful at asking for money unless you have a connection to someone high up in the decision-making process. So-called “cold calls” have a very small chance of success.

PARTNERSHIPS

When the ICGA was formed in 1977 (as the ICCA), it was the first game-AI organization. With its ICCA newsletter, which became the ICCA Journal, it had the first game-AI publication. Today the game-AI space is quite crowded, including journals, conferences, and game competitions. The question posed was whether the ICGA should consider partnering with like-minded organizations.

The TCEC (Top Chess Engine Championship) is a rival chess championship. While the ICGA event emphasizes a face-to-face competition, TCEC is all online. Both types of events have pros and cons. Should the ICGA consider approaching the TCEC for a partnership? Almost all respondents who comment on this agreed that this was a good way forward. Why have two competing championships?

CoG, the Conference on Games (formerly CIG, Computational Intelligence and Games), is an annual IEEE-sponsored conference. It has grown over the years and their 2019 London event had around 250 attendees (161 papers/posters/demos). In contrast, the ICCA’s Advances in Computer Games conference had around 25 attendees in Macau (10 papers). Should the ICGA consider approaching the CoG for a partnership? Again, the majority of respondents favored this. However, there was a caveat in that CoG has a much wider scope of game-AI than does the ICGA.

The reality is that the ICGA is better off partnering with a larger conference as a way of reducing the costs of running our annual events. Stand-alone ICGA events, given our small audience, are expensive to run.

Other companies/groups were suggested as potential partners for the ICGA. These will be addressed in due course.
VOLUNTEERS

A few members kindly volunteered to help with ICGA activities, but all but one of them are current or past volunteers. Thank you for your support.

CONCLUSIONS

The preceding was a brief summary of the survey results. There were numerous ideas given in the responses, some of which are mentioned in this report. I appreciate that many of you reflected on the questions asked and gave thoughtful responses.

From the survey results, talking with ICGA members (in Macau and by email), and by understanding the ICGA financial statements, I conclude that the most pressing issue that we have is the size of our membership base. Quite frankly, we are too small to be sustainable in the long-term. That means we need to act now, or in several years we will be faced with a painful decision.

I do not see an obvious (or easy) way to grow our membership. Over the next few months, this has to be addressed. We must come up with a plan, one that has a good chance of success given the limited volunteer resources that we have.

An issue that came up in multiple survey responses over multiple questions was the scope of the ICGA. Our “definition” of games of interest is narrow, the legacy of our original chess-based roots. In many ways, the original goals of the founding ICCA have been realized. Computers are super-human at chess. Checkers and Awari have been solved. We have super-human poker players. And so on. The last major holdout was the game of Go, but in 2016 AlphaGo stunned everyone with its super-human play. You can argue that the ICGA is a victim of its success. Over our 50 years of work, game-AI has moved from the leading-edge of AI research to the fringes. In other words, our community’s tremendous success has led to the AI community’s lack of interest. Game over. Well done. Time to move on.

Do we want to broaden our scope? Perhaps that is the right way to grow our membership. But then that puts us in direct competition with other game-AI conferences/events. The answer to this question is not easy, but answering it is vital to building a plan to make the organization sustainable.

If we can answer these two questions – membership and scope – then we will have the core of a strategic plan for the ICGA.

I welcome your feedback.

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