

System Dynamics Society 2016 Winter Policy Council Meeting Marketing & Communications Report

Peter S. Hovmand

February 21, 2016

Accomplishments

The main accomplishment for marketing and communications in 2015 was completing the marketing and communications pilot survey of current and past members. The primary goal for this was to assess the feasibility of the System Dynamics Society (SDS) conducting our own annual marketing and communication surveys (versus contracting with an outside survey) to 1) inform the design marketing and community initiatives and 2) be able to evaluate the impact with year-on-year comparisons.

Supporting this effort was a survey team that included Assistant VPs David Lounsbury, Elise Axelrad, and Nancy Zoellner along with the Home Office and Washington University in St. Louis doctoral student Mary Jo Stahlschmidt who completed the analysis and report.

System dynamics spans a bewildering set of potential markets from traditional areas such as business, public policy, K-12 education to public health, medicine and even childrearing. This represents both a terrific opportunity and presents a unique challenge in understanding our field to grow the field of system dynamics. Historically, the PC has tended to rely on individual social networks within our respective fields for information about trends without acknowledging or being aware of differences in the dynamics across application areas or regions.

Surveys represent a critical source of information for the Policy Council to inform the design and evaluation of marketing and communication initiatives. Over the years, the tendency has been to use non-systematic sampling methods (e.g., distributing a survey at a conference or to all membership). The survey team reviewed these approaches and identified several limitations. First, there is the problem of response bias and under-sampling people who are no longer involved or have never been involved in the SDS or attended a conference. Second, by sampling all members, we effectively exhaust our sample with one survey and lose opportunities to have more efficient and frequent surveys on different topics. Hence, the initial assessment by the survey team was that we needed a better approach to sampling members and potential members, especially people who had never joined the SDS or discontinued their involvement with the SDS.

We designed the survey to evenly 250 individuals and stratified the sample by membership since 2012 (i.e., surveying 125 members who had not renewed their

membership since 2012 and 125 members who had joined or renewed their membership). Additionally, in response to a need for information for the *System Dynamics Review*, we also decided to field both a paper version and an online version of the survey at the 2015 conference. Hence, we were able to compare survey responses between the typical conference survey and a random sampled survey. It's worth noting that at the same time, a third survey of membership was distributed to help support the publications strategy committee, a point that will be considered as part of the future recommendations later in this report.

The electronic version of the survey was developed and distributed as link to a Google Forms survey and analyzed in SPSS. While easy to develop and generally easy to complete, the data format was difficult to download and use. The downloaded spreadsheets have the order of the columns in the order edited, not in the order of the survey, and multiple response items are returned as a simple list of responses instead of separate columns with "dummy" indicators as is more typically used in statistical analyses. This required recoding, conversion, and cleaning of data before analysis.

Results from the pilot

The main purpose of the pilot was to assess the feasibility of conducting our own in-house surveys versus seeking an outside vendor. We receive a total of 90 responses (46 from the conference sample and 44 from the random sample).

We had a decent response rate of past members. We expected 50% of the responses from the random sample to be from individuals who did not renew their membership, and received 36%. While less than expected, the responses were complete and often provided useful qualitative information providing an important and new source of information about past members.

Most responses came in within approximately 2 weeks. We also tested the use of a social incentive to increase survey responses, however, the social incentive seemed to have little to no effect. Future efforts might test the use of reminders and other tools to increase the survey response rate.

Overall, the distributions for the random sample were better than the conference sample and included responses from people who had discontinued their membership, more responses from regions outside North America and Europe, and a better distribution with respect to various industries. It is worth noting that conference surveys tend to oversample students. From this perspective, it seems feasible and efficient for us to design and conduct our own surveys on a regular basis provided we choose a better platform (e.g., Qualtrics).

Analyses

The results also generated some interesting results about what draw people to system dynamics, why they join the SDS and attend conferences, how they are planning on using system dynamics in the next five years, what journals they submit to, other conferences they attend, and why they don't renew their membership. This section

summarizes some of these results beginning with the analysis of membership used for the survey.

We used the 2014 membership year as a basis for our sampling in 2015 because we wanted to have an accurate picture of who was a member and who had not renewed. Figure 1 shows the distribution of 2014 membership by the first year they appeared in the SDS membership database, which begins in 1998.

There are several points worth noting about the distribution. First, there are three types of members: “newcomers”, “mid-timers”, and “old-timers” where mid-timers are nearly flat, ranging between 6 and 10% of the 2014 membership. The implication is that among those who join the SDS and make it to year four, they tend to stick with it and not dropout forming the pipeline to old-timers. Second, the three-year dropout rate is significant (much higher than the retention rate) and it’s worth noting that people don’t just go into a sink. They leave with a perception of system dynamics, SDS, and conferences that informs perceptions of system dynamics in their networks.

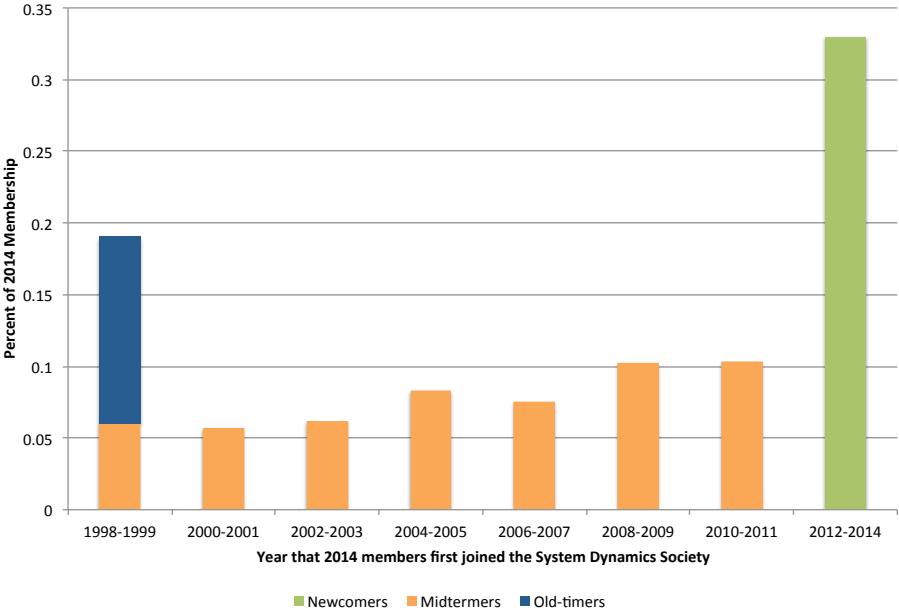


Figure 1 Distribution of 2014 membership by year they first appeared in the SDS membership database

Third, many of the policy dilemmas that the PC has considered about making the field more accessible versus improving the quality of the results is arguably a conflict between old-timers and newcomers, and as the survey results show, plays out badly in how system dynamics as a field and the SDS is perceived.

The survey had a several sections including basic demographics, SDS membership, conference attendance (including both ISDC and other conferences), publications (*SDR* and other journals), and perceptions of system dynamics. People interested in more

details are encouraged to look at the SDS Marketing and Communications Survey Results 2015 summary and direct questions/requests for additional analyses to the VP of Marketing and Communications.

For marketing and communications, there are several points to note for discussion as these will inform marketing and communication initiatives in 2016:

How are people first learning about system dynamics?

About 40% of respondents in both samples reported first hearing about system dynamics in course, either a system dynamics course or another course that mentioned system dynamics, while 18-20% heard about system dynamics from a colleague.

What drew people into system dynamics?

Responses for what drew people into system dynamics differed by whether or not they had attended ISDC. Among those who attended ISDC, the most frequently cited attraction was system dynamics as a way of making systems thinking/mental models explicit or making sense of complexity/chaos. Among those who had never attended ISDC, the main attractions cited was a course in system dynamics and making systems thinking/mental models explicit. Note that among those who had never attended ISDC, no one reported being drawn to system dynamics by the Beer Game.

How do people plan to use system dynamics over the next five years?

The top three applications of system dynamics are business, research, and teaching with an equal emphasis on each followed by promoting SD. Surprisingly few mention consulting, and interesting, three respondents mentioned child-rearing.

Why do people join the System Dynamics Society?

Reasons people initially joined the SDS are about learning new ideas, new tools, and learning system dynamics; networking; and attending the conference. The least frequent responses were mentoring, access to *SDR*, and quality of the work.

Why do people renew their membership in the System Dynamics Society?

People renew for reasons similar to why they originally joined, with the exception that friendship with other members increases as a factor influencing their decision to renew.

Why are people not renewing?

Fourteen participants provided information on why they chose not to renew their SDS memberships. Two themes emerged. Some participants chose not to renew due to cost or budget issues (n=3). A second group reported they no longer felt connected to the SDS or that it not adding value. Two mentioned it was dominated by academics, another mentioned it was dominated by consultants.

Another stated that members “came to SDS to massage their egos.” Two also reported they failed to renew their membership due to laziness.

How did respondents perceive and talk about system dynamics?

Overall, there were strong associations between seeing the current quality of applications as high, colleagues having a high regard for system dynamics, feeling encouraged by others to pursue system dynamics, and that certification would help improve the quality of SD practice. However, there was also a perception of general resistance to system dynamics, and this associated with people distancing themselves from the field because of the low quality of work.

Discussion

It is clear from the survey that there is a wide range of potential applications of system dynamics across many different fields and that we already have a diverse enough membership to increase visibility in these areas. Drawing on this existing diversity (e.g., helping to coordinate submissions to targeted conferences in application fields, creating incentives for members to attend and promote system dynamics at these conferences) would be “low hanging fruit” for increasing the visibility of system dynamics and applications.

The survey also highlighted some of the value people get from attending the International System Dynamics Conferences (ISDC). Specifically, many are looking for new tools and ways of thinking about complexity, including learning and become more proficient at system dynamics. Moreover, ISDC provides attendees a unique opportunity to learn the language of system dynamics. This is reinforced by the fact that among academics who submit papers to peer reviewed journals, those that have never attended ISDC have only a 57% acceptance rate versus the higher norm of 70-80%.

There is a real tension in the shape of system dynamics as a community (or communities?) of practice between being perceived as too insular versus being open to helping people learn the language of system dynamics. This does not have to be an either/or debate between the emphasis on quality by old-timers and the frustration of newcomers with the insularity of the profession. We need to design a smarter strategy that meets our potential members and customers of system dynamics where they are at, that is, move toward more of a customer orientation.

In a similar way, we also need to consider the implications of how current academic programs are structured. The survey highlighted a number of potentially serious issues with the low quality student work at the same time that most people first hear about or learn about system dynamics in a course. We need to consider not just the few students we draw in, but also the unintended consequences of all the students who get turned off by system dynamics. Essentially, from a marketing and communications perspective, we need to change the shape of the curve for legitimate peripheral participation.

Overall, the results of the pilot yielded rich information that can be used to inform PC decisions and develop a marketing and communications strategy. By moving to a different platform, we would also be able to efficiently and rapidly turn around analyses

to inform decision-making. Stratified random sampling also proved feasible and could be expanded to include other topics without exhausting the sample. However, along similar lines, it would be good to formally coordinate survey efforts better through a dedicated unit within the SDS to avoid members receiving multiple surveys asking similar questions and to improve the overall quality of information for decision making.

2016 Aims

For 2016, the main goals are to:

1. Refine and replicate the SDS Marketing and Communications Survey with results for discussion at the 2016 Summer PC meeting in Delft.
2. Develop and pilot a “newcomer” initiative for introducing and retaining newcomers to system dynamics.
3. Develop and pilot an applications initiative to incentivize members to increase the visibility of system dynamics in application fields.
4. Form a Marketing and Communications Strategy Committee to develop a longer-term marketing and communications strategy for the SDS to be submitted to the 2017 Winter PC for discussion.

Support, cooperation and resources needed as well as potential obstacles/issues

Overall support for marketing and communications is good with the recent addition of several Assistant Vice Presidents. We will begin to organize activities with regular meetings by areas of interest. Support from the Home Office has been excellent and we will continue to rely on access to the membership database for survey and analysis.