

RESEARCH CALL FOR PROPOSALS

Actuarial Innovation and Technology Topic – Data Visualization

BACKGROUND and PURPOSE

With the ongoing emergence of big data, data visualization has replaced the historical “elevator speech” as a tool to quickly render a narrative supported by facts illustrated by underlying data. Much like the elevator speech of old, data storytelling has evolved into an artistic blend of data visualization, analytics, and human oratory.

Visualization leverages our ability to convey the essence of data accurately, while doing so in an aesthetically pleasing way. Many different data visualization techniques have emerged recently, from various forms of dashboard presentations all the way to the “poster board” concept, which has a more visual, static, yet portable, display component. The financial services industry is uniquely poised to benefit more than other vertical industries due to the very nature of the underlying business data, as well as the desire for transparency due to poor public perception and sub-optimal financial performance within the industry over the last decade.

RESEARCH OBJECTIVE

The Actuarial Innovation & Technology Program Steering Committee (AITPSC) is seeking researchers to prepare a written report that summarizes existing data visualization research. The report must also include the researchers’ interviews with key members of the data visualization eco-system and relay their insights on the future evolution of data visualization. The goal of the report is not only to illustrate the current state and possible future evolution of data visualization, but also to serve as an informative guide to data visualization for the actuarial community.

The report could also provide useful information for government entities, insurance policymakers, and the broader public. The AITPSC intends this report to serve as a starting point for actuaries, actuarial students, and insurance practitioners who are exploring improved data visualization techniques and opportunities within the actuarial profession and broader financial services vertical industry. The report must not be construed as an advocate or endorsement for specific software offerings or products.

PROPOSAL

The proposal should describe, in some detail, the content to be included in a report, aimed at actuaries and insurance professionals, that can serve as an introductory guide to data visualization.

The report should include:

- A literature review summarizing previously written articles on the following topics:
 - o Data visualization history,
 - o Current landscape and trends, and
 - o Practice-specific data visualization examples from life, health, and property/casualty lines of business.
- Actuarial practice expansion perspectives including:
 - o Highlights of current and future actuarial opportunities in data visualization,
 - o Background tool requirements needed by actuaries to be successful in the data visualization space,

- o Current areas and topics where actuaries could be more involved,
- o Indications of the effort involved with specific techniques (a smaller firm may have more resource constraints),
- o What actuaries could do to create more opportunities in data visualization in the future, and
- o Case studies of actuaries currently working in data visualization.

Data Collection

Potential methods should include:

- Review and summary of publicly available resources,
- Solicitation of responses from sponsoring section members, and
- Interviews with key individuals within one data visualization discipline.

Suggested Data Visualization Principles to be Included

- 1) Enhanced assimilation of information: Human eyes can absorb and grasp information more easily through visual images than texts and numerical figures. In order to reduce cognitive load in the human brain, it is recommended to provide data insight in a form of visual perspective.
- 2) Quick access to relevant business insights: By embracing visual data discovery processes, organizations improve their ability to find more accurate information within short timeframes. Adopting data visualization dashboards help business users to solely manage reporting platforms without the help of IT staff most of the time.
- 3) Rapid identification of data trends: In this era of rapid technological advancement, the volume of data that companies are able to gather about customers and market conditions can provide business leaders with insights into new revenue and business opportunities, presuming they can spot the opportunities in the mountain of data. Using data visualization, decision makers can grasp shifts in customer behaviors and market conditions across multiple data sets much more quickly.
- 4) Predict forecast analysis: With the real time data visualization, users can easily carry out predictive analysis to forecast the expansion of business footprints.
- 5) Customized data visualization: Yet another vital advantage of data visualization is that it not only provides graphical representation of data, but also allows changing the form, omitting what is not required, and browsing deeper to get further details.

SELECTION PROCESS

The AITPSC will appoint a Project Oversight Group (POG) to oversee the project. The AITPSC is responsible for recommending the proposal to be funded. Input from other knowledgeable individuals also may be sought, but the AITPSC or POG will make the final recommendation, subject to SOA leadership approval. The SOA's Research Actuary will provide staff actuarial support.

Questions

Any questions regarding this RFP should be directed to Mervyn Kopinsky, SOA Experience Studies Actuary, (phone: 847-706-3571; email: mkopinsky@soa.org).

NOTIFICATION OF INTENT TO SUBMIT PROPOSAL

If you intend to submit a proposal, please e-mail written notification by March 15, 2020 to Korrel Crawford (kcrawford@soa.org).

SUBMISSION OF PROPOSAL

Final proposals for the project should be sent via e-mail by March 31, 2020 to Korrel Crawford at kcrawford@soa.org.

Note: Proposals are considered confidential and proprietary.

CONDITIONS

The selection of a proposal is conditioned upon and not considered final until a Letter of Agreement is executed by both the Society of Actuaries and the researcher.

The SOA and AITPSC reserve the right to not award a contract for this research. Reasons for not awarding a contract could include, but are not limited to, a lack of acceptable proposals or a finding that insufficient funds are available. The SOA and AITPSC also reserve the right to redirect the project as is deemed advisable.

The SOA and AITPSC plan to hold the copyright to the research and to publish the results with appropriate credit given to the researcher(s).

The SOA and AITPSC may choose to seek public exposure or media attention for the research. By submitting a proposal, you agree to cooperate with the SOA and AITPSC in publicizing or promoting the research and responding to media requests.

The SOA and AITPSC may also choose to market and promote the research to members, candidates and other interested parties. You agree to perform promotional communication requested by the SOA and AITPSC, which may include, but is not limited to, leading a webcast on the research, presenting the research at an SOA meeting, and/or writing an article on the research for an SOA newsletter.