AAE Prize for the Creative Use of Actuarial Skills

Document for Discussion on AAE Education Committee

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Executive Summary

Recognizing the benefit of creativity, this paper proposes that each year the Actuarial Association of Europe (AAE) offer a prize to the best student project that demonstrates more creative use of the actuarial skillset. It will be the responsibility of the Education Committee to create a subcommittee each year for the purposes of assessing the project entries, and picking a winner and runner-up.

What is an Actuary?

For the purpose of this competition, being an actuary is defined quite broadly as "***a professional with a skillset to use numbers to make judgments about the future***".

This definition aims to encourage a greater range of potential areas outside the traditional ones where the actuarial skillset is extensively applied. Projects should be accessible not just to actuaries but to a wider audience. Other definitions of what is an actuary exist. This definition was chosen because it is optimistic regarding the future potential of actuaries - and seeing greater potential is considered a key element when applying creativity.

What is the Actuarial Skillset?

For the purpose of the competition, the actuarial skillset is considered to be:

Multi-disciplinary

- Actuarial training is *multi-disciplinary*, distinguishing actuaries from specialist fields, e.g. statisticians.
- Actuarial training has elements of mathematics, probability & statistics, data science, finance, economics, investment, computer science and risk management.
- Making judgements about the future, in a responsible and professional manner, also involves judging likely future behaviours and trends. So understanding *human*, *political, ethical* and *leadership* aspects are also important, as is *communication*.
- Just as actuaries don't need to be doctors to understand mortality, they don't need to be experts in other fields to apply their skills there. But applying actuarial skills in wider ways involves also demonstrating a working knowledge and big picture understanding of those fields.

Quantitative

At its core, actuarial work involves using numbers to make judgments about the future, or more specially, it involves determining answers related to the following equation:

$$\Sigma\, E(CF_t) \,/\, (1+i_t)^t$$

where CF_t ***= cash flow at time t***

$E(CF_t)$ ***= the expected value of*** CF_t

i_t ***= the appropriate discount rate for*** CF_t

Variations of this formula are either directly, or indirectly, core to most actuarial work – work that involves using numbers to make judgments about the future.

Competition Prize & Applications

Prize

The prize for the winning project consists of:

- The AAE Medal for the Creative Use of Actuarial Skills.
- A cash prize of €5,000 (size of cash sum to be discussed)
- An opportunity to present the winning project to an AAE conference, with all expenses covered.

There will also be a runner-up prize of €2,000 (size of cash sum to be discussed).

Both individual and group projects will be considered but there will be a preference for group projects showing collaboration with other students.

Applications

Projects should consist of a 5-10 page report and a 4-6 minute video presentation.

The projects will be judged based on three criteria with equal weight given to each

- **creativity / imagination / vision**
- **passion including communication**
- **analyses conducted**

Applications for the inaugural 2020 prize must be submitted by email to xxxx@xxx.xx by (date to be agreed).

The winning project will be announced by (Date to be agreed).

Sample Projects

Three examples of the kind of projects that the AAE would like to see are...

https://youtu.be/SdqkqQlj-GQ

https://youtu.be/wlsieNHMo7k

https://youtu.be/CjvbUDF6Q70

Competition Grading

Overview

The projects will be judged based on three criteria with equal weight given to each

- creativity / imagination / vision [34%]
- passion including communication [33%]
- analyses conducted [33%]

The marking is based on the classical concept of the *Psyche,* as being the head, the heart and the guts. The word *Psyche* is used to refer to the full human mind in its widest sense. In this theory, the heart creates the story and the picture of the world that we use, the head carries out analyses within the boundaries of these stories and pictures and the guts provide the light and energy for it all.

A good analogy is mathematics. In maths we have sets and functions. The set is like the heart and the functions like the head. The brightness and passion of the individual come from their guts. Although much of the focus in maths is on functions, it's the set that is most important as it dominates and limits the potential for the functions. Take the rational numbers as a set, these limit the kind of maths that can be done in this space. Adding the irrational numbers adds potential, e.g. π is not possible without them. Adding the imaginary numbers add potential for even more useful mathematics. So it is with life, the irrational and the imagination expand our limitations. Creativity aims to expand limitations – this is why it is so important.

In college, it's mostly analyses that are given merit, but in the real world, we are also merited on the application of our hearts (our creativity). and our guts (our passion). The aim of this prize is to award merit primarily to the creativity and the passion that can broaden the boundaries of where actuaries work as well as to the sound analyses conducted.

Each project will be given a 'heart' mark, a 'guts' mark and a 'head' mark – each counting 33% towards the overall grade, with marginally more for creativity. Marginal preference will be given to collaborative projects in the even of a tied score.

Marking Schedule

How has this project broadened the story for how actuaries can apply their skills?

Add comments | Grade /34

How much passion has been applied, does it inspire belief that it might work in practice?

Add comments | Grade /33

How much rigour has been carried out in the analyses in the project?

Add comments | Grade /33 **Total grade** **/100**