

Institute and Faculty of Actuaries

Research Work Stream Members – *Systems Thinking Incubator*

The Institute and Faculty of Actuaries (IFoA) is looking for volunteers to join this new work stream to help bring systems thinking into actuarial work and bring actuarial expertise into systems thinking.

Background

Systems thinking is useful to gain deeper understanding of the behaviour of financial markets, the impact of efforts to curb global warming, macro-economic stability, banking system interactions, interconnections between investment portfolios and economies, and emergent behaviours of the financial system given various players' objectives. Systems thinking looks at both the macro and the micro, wherever there are complex interactive systems with countervailing feedback systems - sometimes stable, sometimes not.

Systems thinking seeks to understand linkages between actors in a system as well as interactions among inflows, outflows, stocks and resources, and feedback loops. Systems thinking techniques approach problems in a holistic manner, starting from an objective basis - much like actuarial work - and given the complex nature of systems being analysed, insights are rarely found in simple equations. Instead it might be a series of insights as to the stability of systems under different interventions by the actors in them - a useful approach to 'stress and scenario testing'.

Systems thinking is particularly important to actuaries because there are important behaviours which emerge from the combined actions of players in the financial system that cannot be understood without a wider view of linkages among them.

Working party objective/aims

The main objective of this work stream is to bring systems thinking into actuarial work and bring actuarial expertise into systems thinking. To that end, the IFoA Systems Thinking Incubator seeks to set up a research work stream to research systems thinking and its application to the areas in which actuaries operate. Specifically, by:

- identifying organisations already conducting systems thinking
- conducting a broad survey of formal systems thinking approaches as well as approaches applying systematic analyses which may not be formally labelled 'systems thinking'
- analysing and synthesising systems thinking approaches
- undertaking a literature review of academic and practical work
- feeding into a repository, in ongoing development, of systems thinking approaches, methods, people and organisations
- identifying successful practical applications of systems thinking work, both commercially and in policy
- identifying candidate actuarial problems for systems thinking approaches, and
- focussing on ways to facilitate communication of findings and expedite learnings among working party members and wider audiences.

The target audience for the research is actuaries in general as well as actuaries and other professionals working in areas where systems thinking is relevant.

Potential outputs:

- a webinar focussing on systems thinking
- a repository of systems thinking other organisations, resources, approaches and problems
- additional materials to help actuaries learn about systems thinking.

Time commitment

Members who join the work stream will be asked to devote a minimum of one to two hours per week, with the opportunity to spend more time depending on one's interest and availability. Further background reading may be expected, but this will contribute to personal development for those already working in this field and will be a chance for others to broaden their knowledge.

Work stream meetings will be arranged at mutually convenient times for all involved. If you live or work near to one of the IFoA offices, you are encouraged to use our facilities for the calls/meetings. Similarly, if more than one member of the working party is based close to each other, you may agree to meet up and dial in together, but there will be no requirement for volunteers to meet in one place.

April 2018