EuSpRIG 2016

Thursday 7th July 2016, ICAEW, Moorgate, London
The Science of Spreadsheet Risk Management

08:30 – 09:30 **Arrival, Registration & Coffee**

09:30 – 09:45 **Welcome keynote**

09:45 – 10:30 **Session 1**
   Teaching methods are erroneous: approaches which lead to erroneous end-user computing.
   Mária Csernoch, Piroska Biró

   10:30 – 11:15 **Session 2**
   Characteristics of Spreadsheets Developed with the SSMI Methodology.
   Paul Mireault

11:15 – 11:45 **Coffee Break**

11:45 – 12:30 **Session 3**
   A Programmatic Approach to the development of Solutions in Excel.
   Peter Bartholomew

12:30 – 14:00 **Lunch**

14:00 – 14:45 **Session 4**
   A Conceptual Model for Measuring the Complexity of Spreadsheets.
   Thomas Reschenhofer, Bernhard Waltl, Klym Shumaiev, Florian Matthes

14:45 – 15:30 **Session 5**
   A Pilot Study Exploring Spreadsheet Risk in Scientific Research
   Ghada AlTarawneh, Simon Thorne

15:30 – 16:00 **Tea break**

16:00 – 16:45 **Session 6**
   The use of the Power Query / Get & Transform tools in Excel
   Simon Hurst

16:45 – 17:00 **Q&A**

17:00 -- **Conference Close**
   AGM to discuss future direction of EuSpRIG.

19:00 – Conference Dinner, Great Hall, ICAEW (Please confirm whether attending)

Registration and other information: http://www.eusprig.org

Teaching methods are erroneous: approaches which lead to erroneous end-user computing

Mária Csernoch, Piroska Biró
4028 Kassai út. 26. Debrecen, Hungary

If spreadsheets are not erroneous then who, or what, is? Research has found that end-users are. If end-users are erroneous then why they are? Research has found that responsibility lies with human beings' fast and slow thinking modes and the inappropriate way they use them. If we are aware of this peculiarity of human thinking, then why do we not teach students how to train their brains? This is the main problem, this is the weakest link in the process; teaching. We have to make teachers realize that end-users are erroneous because of the erroneous teaching approaches to end-user computing. The proportion of fast and slow thinking modes is not constant, and teachers are mistaken when they apply the same proportion in both the teaching and end-user roles. Teachers should believe in the incremental nature of science and have high self-efficacy to make students understand and appreciate science. This is not currently the case in ICT and CS, and it is high time fundamental changes were introduced.

Characteristics of Spreadsheets Developed with the SSMI Methodology

Paul Mireault
Founder, SSMI International
Honorary Professor, HEC Montréal

The SSMI methodology was developed using concepts from Computer Science, Software Engineering and
Information Systems and has been taught to undergraduate and MBA students and in Executive training seminars. In this paper, we describe the major characteristics of the spreadsheets developed using the methodology and show how they contribute to reduce many error causing factors.

A Programmatic Approach to the development of Solutions in Excel

Peter Bartholomew
MDAO Technologies Ltd

Spreadsheets offer a supremely successful democratisation platform, placing the manipulation and presentation of numbers within the grasp of users that have little or no mathematical expertise or IT experience. What appears to be almost completely lacking is the deployment of any structure within a 'normal' solution that extends beyond single-cell formula. The elements that allow conventional code to scale without escalating errors appear to be absent. This paper considers the use of controversial or lesser-used techniques to create a coherent solution strategy in which the problem is solved by a sequence of formulas resembling the steps of a programmed language.

A Conceptual Model for Measuring the Complexity of Spreadsheets

Thomas Reschenhofer, Bernhard Waltl, Klym Shumaiev, Florian Matthes
Technical University of Munich
Munich, Germany

Spreadsheets are widely used in industry, even for critical business processes. This implies the need for proper risk assessment in spreadsheets to evaluate the reliability and validity of the spreadsheet's outcome. As related research has shown, the risk of spreadsheet errors is strongly related to the spreadsheet's complexity. Therefore, spreadsheet researchers proposed various metrics for quantifying

different aspects of a spreadsheet in order to assess its complexity. However, until now there is no shared understanding of potential complexity drivers for spreadsheets. The present work addresses this research gap by proposing a conceptual model integrating all aspects which are identified by related literature as potential drivers to spreadsheet complexity. In this sense, this model forms the foundation for a structured definition of complexity metrics, and thus enhances the reproducibility of their results. At the same time, it forms the foundation for identifying further applicable complexity metrics from other scientific domains.

A Pilot Study Exploring Spreadsheet Risk in Scientific Research

Ghada AlTarawneh, Simon Thorne
Cardiff Metropolitan University

This paper discusses the risks and potential impacts of spreadsheet errors in scientific research data in a Neuroscience research centre in the UK.

Spreadsheets usage in neuroscience, or indeed any medical discipline, is a largely unreported area of spreadsheet research. This paper presents a case study exploring the possible risks and impacts of spreadsheet errors in the neuroscience research centre at the University of Newcastle. Data was collected using an online questionnaire with 17 participants and two detailed semi-structured interviews.

The analysis highlights that errors in research data may lead to severe impacts such as misleading science and damaged personal and organisational reputations. In addition, many risks factors arise from using spreadsheets such as inadequate design and a lack of training.

Spreadsheets are used widely in business and the impacts and risks in these fields have been studied and highlighted in detail. However, scientific research and spreadsheets have also a significant relationship that has not been clarified. The paper also draws out the similarities in spreadsheet practice between the scientific and business communities.

The use of the Power Query / Get & Transform tools in Excel

Simon Hurst
The Knowledge Base

Excel is no longer a spreadsheet. The inclusion of database capabilities at the heart of Excel, first as part of the PowerPivot add-in and then as the Power Query add-in and most recently the built-in Get & Transform tools, means that Excel is now a spreadsheet/database hybrid.

The obvious application of the new Power BI range of tools is for data analysis and visualisation but these tools have the potential to transform nearly all aspects of Excel usage by liberating users from the restrictions of the Excel grid. The presentation will concentrate on the Power Query and Get & Transform tools. It will ignore the data analysis aspects and concentrate on how the tools can be used to replace standard Excel functionality.

The practical application of the built-in database tools will be demonstrated by using them to consolidate account balance data from several separate Excel workbooks and use the consolidated data to create a structure management report that can be refreshed to include data from additional Excel workbooks copied to a designated folder.

Attendees will be asked to consider whether the techniques used are likely to be adopted in practice and what the effects on spreadsheet reliability and auditability might be.

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