

Spreadsheets on the Move: An Evaluation of Mobile Spreadsheets

Derek Flood, Rachel Harrison, Kevin Mc Daid

The power of mobile devices has increased dramatically in the last few years. These devices are becoming more sophisticated allowing users to accomplish a wide variety of tasks while on the move. The increasingly mobile nature of business has meant that more users will need access to spreadsheets while away from their desktop and laptop computers. Existing mobile applications suffer from a number of usability issues that make using spreadsheets in this way more difficult. This work represents the first evaluation of mobile spreadsheet applications. Through a pilot survey the needs and experiences of experienced spreadsheet users was examined. The range of spreadsheet apps available for the iOS platform was also evaluated in light of these users' needs.

A Platform for Spreadsheet Composition

Pierpaolo Baglietto, Martino Fornasa, Simone Mangiante, Massimo Maresca, Andrea Parodi, Michele Stecca

The process of elaborating spreadsheet data is often performed in a distributed, collaborative way, [which] may lead to errors in copy-paste operations, loss of alignment and coherency due to multiple spreadsheet copies in circulation, as well as loss of data due to broken cross-spreadsheet links. In this paper we describe a methodology, based on a Spreadsheet Composition Platform, which greatly reduces these risks. The proposed platform seamlessly integrates the distributed spreadsheet elaboration, supports the commonly known spreadsheet tools for data processing and helps organizations to adopt a more controlled and secure environment for data fusion.

Controls over Spreadsheets for Financial Reporting in Practice

Nancy Coster, Linda Leon, Lawrence Kalbers, and Dolphy Abraham

This paper describes a survey involving 38 participants from the United States, representing companies that were working on compliance with the Sarbanes-Oxley Act of 2002 (SOX) as it relates to spreadsheets for financial reporting. The findings of this survey describe specific controls organizations have implemented to manage spreadsheets for financial reporting throughout the spreadsheet's lifecycle. Our findings indicate that there are problems in all stages of a spreadsheet's life cycle and suggest several important areas for future research.

In Search of a Taxonomy for Classifying Qualitative Spreadsheet Errors

Zbigniew Przasnyski, Linda Leon, and Kala Chand Seal

In this paper, we propose a taxonomy for categorizing qualitative errors in spreadsheet models that offers a framework for evaluating the readiness of a spreadsheet model before it is released for use by others in the organization. The classification was developed based on types of qualitative errors identified in the literature and errors committed by end-users in developing a spreadsheet model for Panko's (1996) "Wall problem." Closer inspection of the errors reveals four logical groupings of the errors creating four categories of qualitative errors. The usability and limitations of the proposed taxonomy and areas for future extension are discussed.

Breviz: Visualizing Spreadsheets using Dataflow Diagrams

Felienne Hermans, Martin Pinzger, Arie van Deursen

In previous work we have analyzed the information needs of spreadsheet professionals and addressed their need for support with the transition of a spreadsheet to a colleague with the generation of data flow diagrams. In this paper we describe the application of these data flow diagrams for the purpose of understanding a spreadsheet with three example cases. We furthermore suggest an additional application of the data flow diagrams: the assessment of the quality of the spreadsheet's design.

Requirements for Automated Assessment of Spreadsheet Maintainability

José Pedro Correia, Miguel A. Ferreira

In this position paper we argue for the need to create a model to estimate the maintainability of a spreadsheet based on (automated) measurement. We propose to do so by applying a structured methodology that has already shown its value in the estimation of maintainability of software products. We also argue for the creation of a curated, community-contributed repository of spreadsheets.

From Good Practices to Effective Policies for Preventing Errors in Spreadsheets

Daniel Kulesz

Good policies should specify rules which are based on „known-good“ practices. While there are many proposals for such practices in literature written by practitioners and researchers, they are often not consistent with each other. Therefore no general agreement has been reached yet and no science-based “golden rules” have been published.

This paper proposes an expert-based, retrospective approach to the identification of good practices for spreadsheets. It is based on an evaluation loop that cross-validates the findings of human domain experts against rules implemented in a semi-automated spreadsheet workbench, taking into account the context in which the spreadsheets are used.

Effect of Range Naming Conventions on Reliability and Development Time for Simple Spreadsheet Formulas

Ruth McKeever, Kevin McDaid

This paper presents the results of two iterations of a new experiment, which measure the effect of range names on the correctness of, and the time it takes to develop, simple summation formulas. Our findings, supported by statistically significant results, show that formulas developed by non-experts using range names are more likely to contain errors and take longer to develop.

This paper is important in that it finds that the choice of naming convention can have a significant impact on novice and intermediate users' performance in formula development, with less structured naming conventions resulting in poorer performance by users.

An Empirical Study on End-users Productivity Using Model-based Spreadsheets

Laura Beckwith, Jácome Cunha, João Paulo Fernandes, João Saraiva

To improve end-users productivity, recent research proposes the use of a model-driven engineering approach to spreadsheets.

In this paper we conduct the first systematic empirical study to assess the effectiveness and efficiency of this approach. A set of spreadsheet end-users worked with two different model-based spreadsheets, and we present and analyze here the results achieved.

Leveraging User Profile and Behavior to Design Practical Spreadsheet Controls for the Finance Function

Nancy Wu

Recognizing that the use of spreadsheets within finance will likely not subside in the near future, this paper discusses a major barrier that is preventing more organizations from adopting enterprise spreadsheet management programs. But even without a corporate mandated effort to improve spreadsheet controls, finance functions can still take simple yet effective steps to start managing the risk of errors in key spreadsheets by strategically selecting controls that complement existing user practice

Spreadsheet on Cloud – Framework for Learning and Health Management System

1K.S. Preeti, Vijit Singh, Sushant Bhatia , Ekansh Preet Singh, Manu Sheel Gupta

We have proposed a Spreadsheet on the cloud as the framework for building new web applications, which will be useful in various scenarios, specifically a School administration system and governance scenarios, such as Health and Administration. This paper is a manifestation of this work, and contains some use cases and architectures which can be used to realize these scenarios in the most efficient manner.

Towards Evaluating the Quality of a Spreadsheet: The Case of the Analytical Spreadsheet Model

Thomas A. Grossman, Vijay Mehrotra, Johncharles Sander

We consider the challenge of creating guidelines to evaluate the quality of a spreadsheet model. We suggest four principles. First, state the domain—the spreadsheets to which the guidelines apply. Second, distinguish between the process by which a spreadsheet is constructed from the resulting spreadsheet artefact. Third, guidelines should be written in terms of the artefact, independent of the process. Fourth, the meaning of “quality” must be defined. We illustrate these principles with an example. We define the domain of “analytical spreadsheet models”, which are used in business, finance, engineering, and science. We propose for discussion a framework and terminology for evaluating the quality of analytical spreadsheet models. This framework categorizes and generalizes the findings of previous work on the more narrow domain of financial spreadsheet models. We suggest that ultimate goal is a set of guidelines for an evaluator, and a checklist for a developer.

Workbook Structure Analysis – “Coping with the Imperfect”

Bill Bekenn and Ray Hooper

This Paper summarises the operation of software developed for the analysis of workbook structure. This comprises: the identification of layout in terms of filled areas formed into “Stripes”, the identification of all the Formula Blocks/Cells and the identification of Data Blocks/Cells referenced by those formulas. This development forms part of our FormulaDataSleuth® toolset. It is essential for the initial “Watching” of an existing workbook and enables the workbook to be subsequently managed and protected from damage.

Spreadsheets in Financial Departments:

Dr. Kevin McDaid, Dr Ronan MacRuairi, Mr. Neil Clynch, Mr. Kevin Logue, Mr. Cian Clancy, Mr. Shane Hayes

This paper represents an important attempt at profiling real and substantial spreadsheet repositories. Using the Luminous technology an analysis of 65,000 spreadsheets for the financial departments of both a government and a private commercial organisation was conducted. This provides an important insight into the nature and structure of these spreadsheets, the links between them, the existence and nature of macros and the level of repetitive processes performed through the spreadsheets.

Furthermore it highlights the organisational dependence on spreadsheets and the range and number of spreadsheets dealt with by individuals on a daily basis. In so doing, this paper prompts important questions that can frame future research in the domain.

Beyond The Desktop Spreadsheet

Gordon Guthrie, Stephen McCrory

Hypernumbers is a new commercial web-based spreadsheet attempting to address spreadsheet risk in two radically new ways. The core approach is not to mitigate risk but to engineer out risky activities.

Hypernumbers enables barriers between data and programme instructions to be simply and reliably re-imposed, thus draining off a whole category of run-time errors. This separation allows spreadsheet usage to be split into two distinct phases – development, where audit and testing can reduce errors, and deployment, where what would be risky practices in other spreadsheet paradigms are simply engineered out.

An Insight into Spreadsheet User Behaviour through an Analysis of EuSpRIG Website Statistics

Grenville J. Croll

The European Spreadsheet Risks Interest Group (EuSpRIG) has maintained a website almost since its inception in 2000. We present here longitudinal and cross-sectional statistics from the website log in order to shed some light upon end-user activity in the EuSpRIG domain.