CASE BRIEFS

A large spread-sheet software publisher came to NAG to add and audit new functions

When the Excel® team wanted to improve the numerical functions in Microsoft Office 2010 they came to NAG.

For Excel® 2010, Microsoft made many improvements to their spreadsheet application. In particular Excel® 2010 featured an accurate and consistent set of integrated functions. NAG helped to ensure the quality of these functions.

Over the years there had been various academic papers detailing issues associated with Excel® provided functions. Therefore a key goal for the release was to better understand, and to address, any accuracy issues with these functions. Microsoft wanted to implement a set of new algorithms, which retained compatibility with previous versions, but delivered improved accuracy from the statistical, financial and math functions.

NAG was commissioned to do two things. Firstly to review the implementation of the existing content and advise on algorithms that could be employed in order to provide an extended feature set. Secondly NAG were to undertake a rigorous testing exercise including all of the new algorithmic content included in this release. The result was that users were able to rely on functions in Excel® with confidence knowing they now had comparable accuracy to those of other statistical packages.

Note: This project was kept within a closed group under NAG's controlled ISV non-disclosure conditions.

The Process.

NAG was engaged to provide an independent audit of the numerical functions; this work had to be completed to a fixed deadline.

In three months NAG carried out the detailed audit of pre-existing functions. NAG experts studied the accuracy of the functions when applied to different types and sizes of problem and different data set sizes. The team highlighted possible weaknesses and provided advice regarding possible strategies to eliminate these deficiencies. Microsoft then moved ahead with their development process which included improvments to the integrated functions.

After the Excel® team had incorporated the algorithms into the code base, NAG performed the independent testing of the implementation of the numerical functions. The details of errors uncovered were passed to the main team as part of the managed software development. The errors were successfully resolved before the software release date.

Ref: http://blogs.office.com/b/microsoft-excel/archive/2009/09/10/function-improvements-in-excel-2010.aspx?PageIndex=2

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