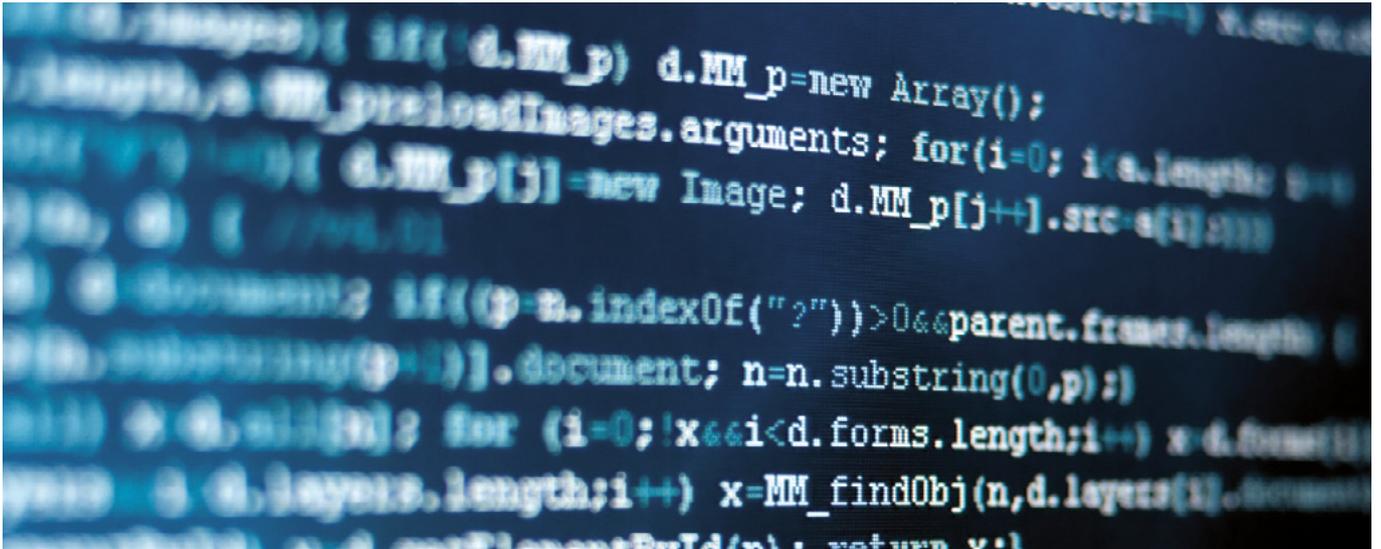# Code Quality Management

Optimise the maintainability, efficiency and profitability
of your software

Code Quality Management (CQM) uses a combination of powerful tools, defined processes and trained developers to help reduce maintenance costs and ensure that your software can be modified while preserving efficiency in the longer term. SQS will work with you to draw up a system of indicators to make the "internal" quality of the software transparent both to developers and to project managers, controllers and clients.

The problem

Many of today's software projects are maintenance and integration projects, i.e. they modify and extend existing software in response to new requirements. When software is modified, the source code is especially important: it must first be possible to locate, then understand and modify the code pertaining to a program function – both for the original developers and for others.

Numerous studies show that many software projects of this kind fail or bring only partial success. This is mostly down to inadequate code quality. While the implementation of business requirements is thoroughly checked and is a criterion for acceptance of the software, the "internal" quality of the software is clearly not sufficiently taken into account.

Measures to safeguard and enhance code quality – like all quality-related activities – can and should be established as early as possible in the project, because every modification to the software makes it increasingly difficult and costly to understand and to modify.
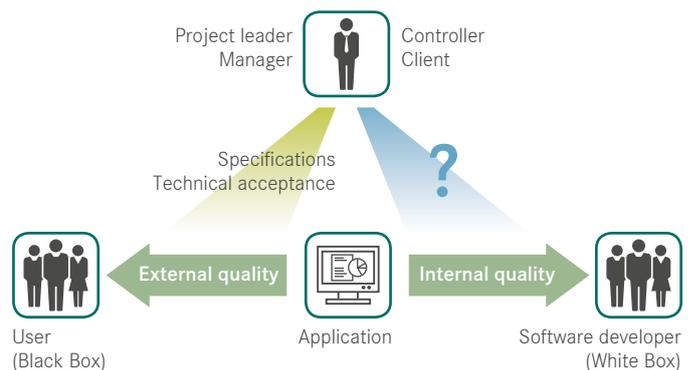
The solution

SQS Code Quality Management makes the quality of source code measurable, identifies risk areas and suggests measures to improve code quality. Metrics are selected and fully or semi-automated tool-based measurements are taken.

When the indicators are in place, the subsequent application of a bi-directional quality model provides both administrative and operational levels with the relevant information:

- Project leaders and managers are given an aggregated view of source code quality, based on the recognised ISO 25010 standard.
- Developers are given informative detail lists which identify risky instructions or structures in the source code.

Tool-level cooperation for CQM

SQS maintains partnerships with the following market-leading CQM tool providers:

Axivion

software tomography

C A S T

The benefits to you

- Transparency and confidence in planning software changes
- Significant reduction in maintenance costs
- More future-proof software
- Knowledge of the quality of the software in direct comparison to other companies
- Ensuring high-quality source code from in-house programmers and/or third parties
- Faster induction of new staff

What can be assessed?

SQS has an extensive list of indicators including both generic and technology-specific metrics (e.g. for Java, C#, C++, C, VB, Cobol, ADA, ABAP, SQL). These metrics identify constructs in the source code that could adversely affect the maintainability and efficiency of the software:

- Security risks
- Design deficiencies
- Inefficient code
- Architecture violations
- High complexity

The SQS Code Quality Repository

SQS has a database of anonymous quality data from over 200 industry projects which is constantly updated. Benchmarking can be used to determine whether the "internal" quality of your software is better or worse than this industry standard.

Our services

The SQS Technical Quality team will assist you in all matters relating to Code Quality Management and has many years of experience in the field. In terms of individual consultancy services, we can offer you:

- An assessment of your source code in a (quick) screening
- An estimate of the effort to make an economically viable improvement to the code quality
- Training and motivation of developers to bring about improved code quality
- Production and establishment of mandatory coding guidelines
- Design of a specific, indicator-based quality model for code quality
- Evaluation and parameterisation of suitable tools
- Definition of processes and information flows and results displays
- Comparison of the source code quality of your software with other software projects or with the industry standard
- Establishment of a semi- or fully automated quality gate for the technical acceptance of software
- Many more services to support you in software development and quality assurance

Contact

For further information, or if you have any other questions, please do not hesitate to send us an e-mail: info@sqs.com