SIG 2019 MODEL CALIBRATION

The SIG software analysis database contains more than 25 billion lines of code from more than 4,000 systems. Our maintainability model uses this data to produce a rating which indicates a system’s relative maintainability compared to the market. As the market evolves, i.e. the overall quality of software changes and various developments continue in the IT industry, SIG performs a yearly recalibration of the model to ensure it reflects modern best practices in software engineering.

Advancements in software engineering mean the market, and therefore the SIG benchmark rating, tends to increase every year. If a system hasn’t changed over time, it is possible that its quality rating decreases, as it likely hasn’t kept up with the market advancements:

Changes in the 2019 maintainability model
This year, we are introducing a new architecture metric, Component Entanglement.
Why is there a need for this new architecture metric?
SIG sees a market trend where software systems increasingly consist of many components that communicate with each other. This is a result of new architectural trends in the market, such as microservices.

Benchmark result: Average number of components per system
This new metric has been developed and added to the quality model based on this trend, indicating the complexity associated with the way they are communicating. Communication lines between components should be clearly defined. Cyclic dependencies and lack of clear grouping/layering in the component structure make it harder to predict the impact of changes, but also to implement changes. This can be done much more efficiently when the components are isolated as much as possible.

Due to the introduction of this new metric, **Component Balance** will no longer result in a low rating if a system has many components. This is consistent with current architecture trends; having many components is acceptable, but only if the dependencies between those components are carefully controlled.
Additional changes
SIG has also recalibrated the quality aspects for **measuring productivity**. What SIG sees in the market is (on average) an increase in productivity levels, where the pace of software development has increased. The model has been adjusted accordingly.

SIG 2020 Model
The next yearly recalibration of the SIG model is scheduled for the spring of 2020.

More information?
Please find more information on the Maintainability Model and Guidance for Producers on our website: https://www.softwareimprovementgroup.com/news-knowledge/guidance-producers-maintainability/

If you have any other questions, please don’t hesitate to contact us.