

Ripple Effects On Software

Introduction:

Software plays an important role in our lives. Products that affect people's lives must have quality attributes. Therefore, good quality software is required and in order to determine the quality of software we need metrics to measure it. A key point here is that the quality of a product may change over time and software is no exception. In the early days of computing, software costs represented a small percentage of the overall cost of a computer-based system. Hence, a sizable error in estimates of software cost had relatively little impact. Today software is the most expensive element in many computer-based systems. Therefore, steps taken to reduce the cost of software can make the difference between the profit and loss of a company. So by determining the quality attributes of software, more precise, predictable and repeatable control over the software development process and product will be achieved.

Ripple Effects On Software:

- What is ripple effect?

The ripple effect is a situation when the drop falls on the water and ripples start to form, it changes and effect the whole state of the water on the top. In economics where an individual's reduction in spending reduces the incomes of others and their ability to spend. In sociology it is able to be observed how social interactions can affect situations not directly related to the initial interaction

- Ripple effect in software engineering:

It is the effect of a modification mayn't be local to the modification but may as well affect other portions of the program. There is a undulate effect from the location of the modification to the other parts of the programs that are affected by the modification. One characteristic of the ripple effect concerns the performance of the program. The most important attribute affecting the ripple effect as a consequence of a program modification is the stability of the program. Program stability is described as the resistance to the amplification of changes in the program. The ripple effect metric shows what impact changes to software will have on the rest of the system. It can be used during software maintenance to keep the system at a high level of quality. Extensions are proposed to the computation of ripple effect to accommodate different aspects of the object-oriented paradigm.

- How to avoid savings, cost and ration for review in ripple effect:

In ripple effect for maintenance, where more than 50% of all maintenance costs arise from changing software. Every development or analysis step which can be automated can save a lot of time and money. On the other hand, partial implemented changes present high risks. They are likely to cause unintended side effects, introduce new bugs, and lead to more instability, rather than improving the software. Today's evolutionary development and frequent changes demand for changing software, and change has become a daily routine for architects, programmers, and project leaders. In this way we can avoid savings, cost and ration using ripple effect provided or assuming that we're using it for software maintenance.

Measurement using ripple effect computation will help in:

- Understanding the nature of the software.
- Estimating the cost, the schedule and the effort devoted to a project.
- Determining the quality of the software.
- Predicting the maintainability of the software.
- Validating best practices for software development.
- Providing optimal maintenance solutions.

By identifying potential impacts before making a change, the risks associated with embarking on a costly change can be reduced, because the cost of unexpected problems generally increases with the lateness of their discovery. The more a particular change causes other changes, the higher the cost is. Carrying out ripple effect computation will allow an assessment of the cost of the change and help management to choose between alternative changes. It will also allow managers and engineers to evaluate the appropriateness of a proposed modification.

CONCLUSION:

Because software now plays a very important role in our lives, we need to ensure that our software products are of good quality. Using CIA and specifically ripple effect as part of a software measurement program can give useful feedback which can then be used to improve future iterations of the product. Previous work has concentrated on measuring ripple effect for procedural software