

Daksh Creation

Software Solution

Nuances of Software Maintenance

The life of your software does not end when it finally launches. In reality, its life has just begun.

Software is always evolving and it is never finished as long as it is used; partly to accommodate for the ever changing world we live in. The evolution of your software might be motivated by a variety of reasons; to keep the software up and running, to upgrade to the latest release, enhance features or to rework the system for future maintainability. No matter the motivation, software change is vital for the evolution and success of it. Therefore, software will have to undergo changes, and understanding the different types of changes your software can go through is important to realize that software maintenance is more than just *bug fixing*. In fact, a study suggests that over 80% of software change is attributed to non bug related changes.

There are four categories of software change:

- Corrective
- Adaptive
- Perfective
- Preventive

Corrective Change

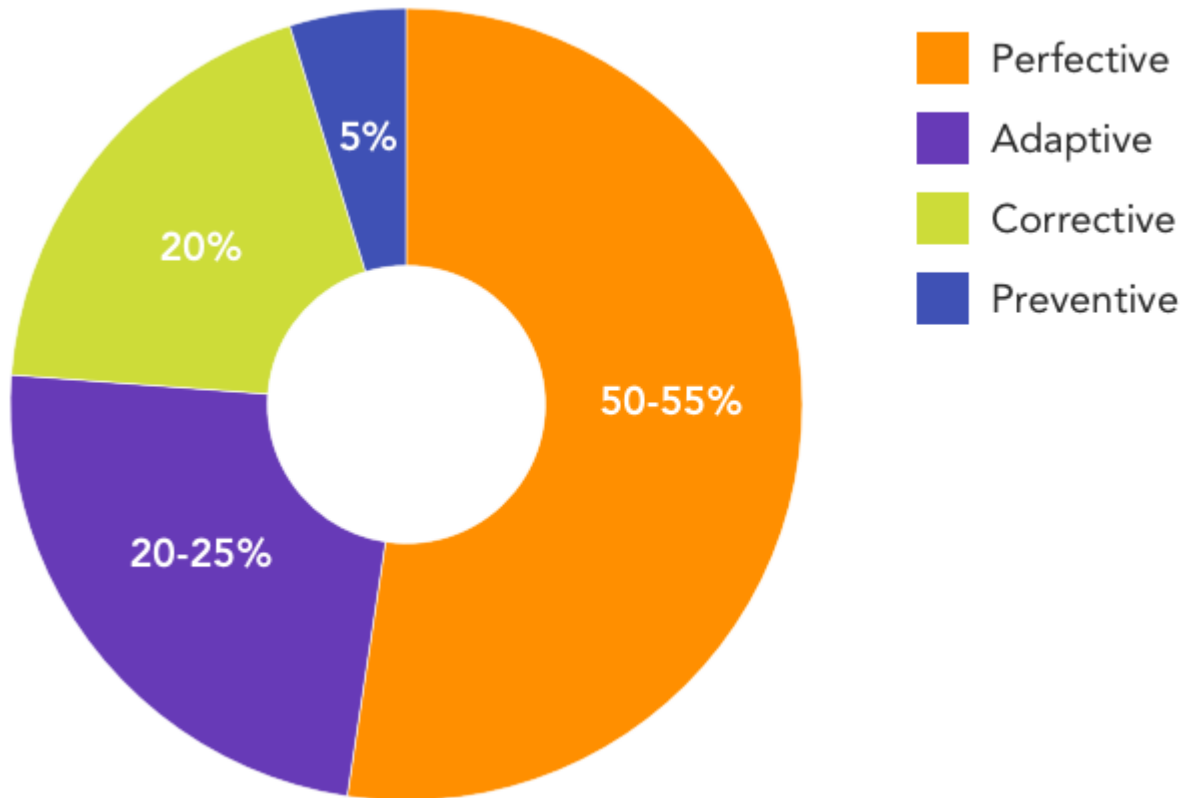
Corrective change, most commonly referred to as “bugs,” is the most typical change associated with maintenance work. Corrective changes address errors and faults in your software that could affect various areas of your software; design, logic or code. Most commonly, these changes are sprung by bug reports created by users. It is important to note that sometimes problem reports submitted by users are actually enhancements of the system not bugs.

Adaptive Change

Adaptive change is triggered by changes in the environment your software lives in. An adaptive change can be triggered by changes to the operating system, hardware, software dependencies and even organizational business rules and policies. These modifications to the environment can trigger changes within other parts of your software. For example, updating the server, compilers, etc or modifications to shipping carriers and payment processors can affect functionality in your software.

Perfective Change

Perfective changes refer to the evolution of requirements and features in your existing system. As your software gets exposed to users they will think of different ways to expand the system or suggest new features that they would like to see as part of the software, which in turn can become future enhancements to the system. Perfective changes also include removing features from a system that are *not effective and functional to the end goal of the system*. Surprisingly, 50-55% of most maintenance work is attributed to perfective changes.



Preventive Change

Preventive changes refer to changes made to increase the understanding and maintainability of your software in the long run. Preventive changes are focused in decreasing the deterioration of your software in the long run. Restructuring, optimizing code and updating documentation are common preventive changes. Executing preventive changes reduces the amount of unpredictable effects a software can have in the long term and helps it become scalable, stable, understandable and maintainable.

Conclusion

Software Maintenance is an essential part of the software development life cycle; it is necessary for the success and evolution of your system. Maintenance on software goes beyond fixing “bugs”, which is one of the four types of software

change. Updating the software environment, reducing its deterioration over time, and enhancing features to satisfy user needs are all examples of maintenance work. Next time you think about maintenance and software change keep in mind that it is much more than “bug” fixing.

Software Maintenance Does Not Include Following Services

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- 1) Maintenance services do not include hardware maintenance and support services, and network software maintenance and support services.

Hardware maintenance and support services are preventive and remedial services that physically repair or optimize hardware, including contract maintenance and per-incident repair. Hardware support also includes online and telephone technical troubleshooting and assistance for setup, and all fee-based hardware warranty upgrades.

- 2) This segment do not includes external services maintenance and support services (internet-based server problem). Software support contracts include

remote troubleshooting and support provided via the telephone and online channels, as well as installation assistance and basic usability assistance.

- 3) In some cases, software maintenance support services does not include new product installation services, installation of product updates, migrations for major releases of software and other types of proactive or reactive on-site services. Software products and technologies do not include other operating systems and infrastructure software.
- 4) Software support services do not include the purchase of subscriptions that provide entitlement and rights to use future minor versions (point releases) or future major releases of software.