

WHITE PAPER

# Software Maintenance for Healthcare Organizations

What's Involved, and Why it's 100% Necessary for the Success of Your Project



Often overlooked in the success of a software product is the importance of maintenance, as well as its role in a product's evolution alongside user needs. Proper maintenance helps ensure that your application or portal:

- **Is consistently available,**
- **Performs optimally,**
- **Can be used correctly in new browser or operating system versions,**
- **Complies with government regulations,**
- **And is helping your organization to meet its goals.**

Effective software maintenance requires more than a customer service representative for emergencies - it requires a highly capable operations and development team. But what's involved in software maintenance? What services are included in a maintenance plan? The answer may depend on your development agency and your hosting plan, but there are a number of key services that every software maintenance plan should take into account. This white paper will explore what software maintenance entails, and what key features your plan should include.

## What Is Software Maintenance?

Software maintenance is the ongoing modification of a software application in order to correct problems, improve performance, or adapt the software product to suit new requirements (such as new browser versions, new mobile devices or operating systems, or coding library updates).

“*The modification of a software product after delivery to correct faults, to improve performance or other attributes, or to adapt the product to a modified environment.*”

- Institute of Electrical and Electronics Engineers (IEEE)

Software maintenance is an ongoing activity that begins as soon as the product is launched. A proper maintenance plan ensures a software product's longevity.

## Proactive vs. Reactive Maintenance

Maintenance is performed both reactively and proactively. Both are equally important.

**Proactive** work involves the anticipation of potential issues, and the implementation of measures designed to prevent them from impacting the system and users. For example, the release of the larger and bezel-free iPhone X necessitated that mobile app developers modify their user interfaces in order to fit properly. Another common scenario involves integrations with third-party software - if a connected app announces a plan to push a change to their API live in six months, your maintenance team can proactively update the integration to ensure its continued functionality. Staying up to date with regulations - after they're announced but before they go into effect - also falls into this category.



**Reactive** work involves resolving bugs and reacting quickly to security threats as they appear. While proactive maintenance is great for predicting issues, reactive maintenance allows you to remain agile for unexpected events. As an example, some companies may anticipate a large influx in traffic and take proactive measures to scale effectively. But sometimes increases in usage are unpredictable, and a maintenance plan allows you to react quickly and increase scalability once increased usage is detected.

Reactive maintenance may also include security updates to the app or server, improvements to performance and speed, and updates that accommodate a change made to the functionality of your software's libraries.

# The 5 Goals of Performing Software Maintenance

A maintenance plan should address five key objectives:



**Stability:**

A reliable, usable website or application.



**Scalability:**

Support for the growth and evolution of your software.



**Security:**

Protection for the integrity and confidentiality of information, as well as from cyberattacks.



**Compliance:**

Conformity with all regulations that apply to this software, such as HIPAA or the ADA.



**An effective user interface (UI):**

A UI design that's intuitive, functional, and allows all key actions to be performed by users.

Maintenance is the longest phase of a project. Performing maintenance tasks ensures the best possible performance of the software product during its lifetime.

## What Tasks Are Involved in Performing Software Maintenance?

When your development team is performing software maintenance, they're working on a broad range of tasks that fit into a number of different categories. Some of those categories include:

### Hosting

Hosting is one of the maintenance factors that's most crucial to the long-term success of your product. Some of the factors involved in maintaining an ideal hosting environment include:

- **Uptime:** The percentage of time that your app has been working and available to users. Uptime is a measure of how reliable your app is - even brief periods of unavailability can cause administrative issues, profit loss, and reflect poorly on your healthcare organization. Medical Web Experts' basic hosting packages start at 99.5% uptime, with additional tiers guaranteeing higher levels of uptime.

- **Monitoring:** Both manual and automated systems for assessing stability of the servers hosting your app, as well as the performance of proactive maintenance and patching to prevent degraded performance or downtime. In addition to monitoring hosting, it's also important to monitor the software itself - new security patches may become available, or a new version of the code library may be launched and require an update to prevent errors in the app.
- **Scalability:** The ability to add bandwidth, storage, or other hosting-related resources that your app may need in order to continue to function optimally as usership grows.

## Protection from Cyber Attacks

The number of [documented software security vulnerabilities is on the rise](#), and the potential for your organization to be the victim of an attack will only increase as the incidence of cyber crime continues to rise. Healthcare organizations are particularly vulnerable to ransomware, which is a type of malware attack wherein the attacker blocks your organization's access to sensitive data (typically PHI) and threatens to either publish it or continue to block your access until you pay a "ransom."

A key facet of software maintenance involves regular security updates to protect your app from attacks. As technologies change and new vulnerabilities are discovered, applications and hosting systems must also be updated to adequately protect against these threats.

## Maintaining Third-Party Connections

A third-party connection refers to an integration between your software and another piece of software built and maintained by a different company. For example, a healthcare organization's custom patient portal may be integrated with an EMR built by another vendor. If the EMR vendor updates their software in a way that breaks the integration, data will no longer be able to be shared between the EMR and patient portal, and the portal developer will need to update their integration. This is a common part of software maintenance, and most maintenance plans will include updates to third-party connections.

## Feature Planning and Expansion as a Continual Process

It's important that maintenance be structured in a way that facilitates the addition of new features, and re-development of existing features. Launching an application with a phased approach - for example, launching your lab result portal first with only the ability for users to view results, and then later adding features like EMR integration and online test kit ordering - is a common and practical approach to development.

But even after the last phase you've planned is complete, continual analysis of your users' behavior and your organization's needs/goals is essential. New features or updates to old features will undoubtedly be necessary over time. Your maintenance plan needs to allow for both large and small changes to your software.

## **Analytics and Usage Reporting**

Using analytics software helps your team collect actionable insights into how users behave in your app, where they drop off, and how you could improve usership and profitability. We use Google Analytics for Firebase, a robust and highly-customizable solution that allows for unlimited reporting and the creation of custom tracking events.

If your app is used by patients or customers, it's highly recommended that you implement a reporting system and track app performance using analytics software. A reporting solution can be included with your maintenance package.

## **Marketing**

Similarly, if the user base of your app consists of patients and/or customers, the addition of a marketing plan can help grow usership of your app. Paid advertising, video, email, print, and in-office campaigns can be extremely effective ways to promote your application.

## **Maintaining compliance with legal regulations (i.e. HIPAA, ADA, CCPA, GDPR)**

It's important for your development team to have a deep understanding of all the legal regulations that apply to your project and your industry during the design and development phases. But it's also essential post-launch that your software continue to properly address these legal requirements. It's important that your maintenance plan addresses compliance.

## How Much Does a Software Maintenance Plan Cost?

The cost of a maintenance plan will vary, and different vendors or development companies will charge different rates. The expenditure is usually reasonable in comparison with the cost to develop the app. In general, software maintenance fees will typically amount to roughly 20% of the initial implementation cost annually.

You'll typically have the option of paying a monthly fee for maintenance, but some companies will offer a once-yearly fee at a significant discount. As a maintenance plan covers such a broad range of potential issues that may arise over the course of a year, a monthly or annual maintenance fee may help your organization maintain financial stability, as it eliminates unexpected costs associated with your software.



## Learn More About Custom Healthcare Software Development, Hosting, and Maintenance Plans

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Maintaining a system is as important as pre-launch development. It keeps systems ready to deal with a changing technical and business environment, and helps prevent cyberattacks that could put your organization's PHI at risk. A software maintenance package is always recommended to ensure consistent and proper performance of a system.

Medical Web Experts specializes in [healthcare app development](#), custom [healthcare portal development](#), and [HIPAA-compliant hosting](#). Our software development projects include a robust and comprehensive maintenance plan designed to address security, compliance, usability, and other key factors in the success of a software project.

To learn more about healthcare software development or our hosting and maintenance plans, [contact us online](#) or call us at (866) 932-9944.