

INFORMATION SYSTEMS MAINTENANCE

Systems maintenance involves cleaning, changing and enhancing the systems to make it more useful in achieving users and organizational goals.

Maintenance is the process of modifying an *information system* to continually satisfy organizational and user requirements. There is a vast difference between hardware and software *maintenance* in costs as well as in objectives. This means changing the application to adapt to a new hardware or software environment.

Importance of IS maintenance

1. Detect issues early, before they become problems

Whether the computer is new or old problems can pop up at any time. By using regular IT servicing one can get the jump on problems and make arrangements so that the business isn't impacted. Using regular IT servicing one can also help reduce IT support costs by fixing during scheduled maintenance windows where other work is scheduled.

2. Prevent against viruses and malware

Viruses and malware are a pain to any business, virus writers actively seek to disrupt the business and access files the network. When the computer is infected a number of symptoms may be felt, from annoying slowdowns to popup messages or contacts emails about strange email you apparently sent them. If your IT system is compromised the business could be used as a launching pad to infect other businesses, which can have consequences as companies start black listing your email address.

If antivirus software is kept up to date then it greatly reduces the chance of a virus infection as commonly known IT loopholes are closed to hackers and virus writers.

3. Speed up the Computer

Over time, files that are stored on the computer can become disorganized and fragmented, this results in slow loading times and delayed access to programs and files. By regularly running speed checks and smart optimization, we can speed up the computers loading times and take care of those annoying pauses when one is busy and need quick and efficient access to the files and software.

4. Keep Antivirus Software Up-to-date

Antivirus software is vital and every PC should be protected but having antivirus software installed isn't the end of your IT security – it needs to be up-to-date and working as intended.

5. Maximize Software Efficiency

Computers age and over time they start to slow down – software packages that performed quickly and efficiently to begin with, can become sluggish and have a negative impact on productivity. Because this slowdown has occurred over many years, the computer user may have grown used to the issue and may think that it is normal. It's not normal. Regular checks should be done to ensure that the software is running to its maximum efficiency – often the answer is just a slight hardware modification or a quick clean out of programs that are no longer needed.

Reasons for maintenance

Once a program is written its likely to require ongoing maintenance. To some extent it may require tune-ups and repairs. Some of the major reasons for program maintenance are:-

- i) Changes in business processes.
- ii) New requests from stakeholders, users and managers.
- iii) Bugs or errors in the program.
- iv) Technical and software problems.
- v) Corporate mergers and acquisitions e.g. Glaxo Smithkline, HP-Compaq.
- vi) Government regulations
- vii) Changes in the operating or hardware on which the applications runs.

Types of maintenance

a) **Adaptive maintenance** refers to the changes made to a system to evolve its functionality to changing business needs or technologies.

b) **Corrective maintenance** refers to changes made to a system to repair flaws in its design, coding, or implementation.

c) **Perfective maintenance** refers to changes made to a system to add new features or to improve performance.

d) **Preventive maintenance** refers to changes made to a system to avoid possible future problems.

e) **Predictive Maintenance**: It pursues constantly know and report the status and operational capacity of the installations by knowing the values of certain variables, which represent such state and operational ability.

To apply this maintenance, it is necessary to identify physical variables (temperature, vibration, power consumption, etc.). Which variation is indicative of problems that may be appearing on the equipment. This maintenance it is the most technical, since it requires advanced technical resources, and at times of strong mathematical, physical and / or technical knowledge.

Techniques of maintaining an information system

Software companies and many other organizations use the following 4 categories to signify the amount of change. These would include:-

1. Slip stream maintenance
2. Patch
3. New release
4. A version

A Slip Stream

This is a minor upgrade – Typically a code adjustment or a minor bug fix, not worthy announcement. It usually requires recompiling of the code and in so doing it may create entire new bugs. These practice accounts for the various variations that we notice on a software that is running or similar machine.

A Patch

This is a minor change to correct a problem. It's usually an addition to an existing program i.e. the programming code representing the system enhancement fix is usually patched into or added to the existing system code e.g. Microsoft releases patches which

they call service packs to correct the bugs that were in the internet explorer and Windows 95.

In correcting the problem this opened a way for hackers and unscrupulous website operators to read the contents of the files of the users.

A New Release

Is a significant program change that often requires changes in the documentation of the software?

A new version

Is a major program change that brings many new features?

Benefits of internet to organization

1. Connectivity and Global Reach

The value of the internet lies on the ability to easily and inexpensively connect so many people from so many places over the globe. This coupled with the ease of use, help customers to link directly to suppliers and business partners etc. They can also trade and advertise across the border.

2. Reduced communication cost:-

Organizations are able to reduce on their mailing, telephone and faxing charges by half.

3. Low transaction cost

Electronic transactions are much cheaper than paper based ones.

4. Reduced Agency cost

Producers can coordinate directly with the consumer have reducing the cost for agencies or the so called middlemen.

5. Interactivity, flexibility and customization

Internet tools can be used to create interactive applications e.g. the use of E-mails and electronic discussion groups to create on going dialogues with the customers.

6. Accelerated distribution of knowledge

Web browser software provides a universal method of accessing information resources. It also helps in interactive marketing which uses the web to hold the customer attention or to capture information about their tastes and interest e.g.

Challenges to the management (ORGANIZATION)

1. Security and privacy of the company and the individual.
2. Legal issues of the role of electronic signatures and the application of copyright laws to electronically copied documents.
3. Technology handles e.g. Bandwidth where an ISP has been unable to keep on with the demand.
4. Internet based transactions aren't recognized by law i.e. There is no legal backing

Managerial Roles

These are the expectations of the activities that managers should perform in an organization. They can be classified as follows:-

1. Interpersonal roles

Managers act as figure heads for the organization when they represent their company to the outside world and perform symbolic duties such as giving out employees awards. They also act as leaders attempting to motivate or to counsel and support subordinate. The manager also acts as liaison between various levels of the organization

2. Information roles

Managers act as the nerve centers of the organization receiving the most concrete and up-to-date information and distributing it. As disseminator and spokesman of the organization they are supported by management information systems, mail and office system.

3. Decisional roles

Managers act as the entrepreneurs by initiating new activities. They handle disturbances in the organization. They allocate resources and negotiate conflicts and mediate between conflicting groups in the organization. There is no single theory of management that is universally accepted, common theories include:-

i) The universal approach

It states that the administration of all the organization requires the same rational approach. It assumes there is a core management process that remains the same across the organization. It emphasizes on the division of labor, chain of command and authority.

ii) Operational approach

This is a scientific approach which conducts a business by establishing standards gained through systematic observation, experiment or reason. It centers on the standardization of work, time and task study, systematic selection and training of workers.

iii) Behavioral approach

It advocates that successful management depends largely on one's ability to understand and work with people who have a variety of backgrounds, needs, perceptions and aspirations. It emphasizes that people are key to productivity and that technology, work rules and standards don't guarantee good job performance.

iv) Systems approach

This assumes that the whole is greater than the sums of the individual tasks (synergy). The manager must not become pre-occupied with one aspect of the organizational management while ignoring other internal and external realities.

v) Contingency Approach

Emphasis on the choice of an alternative course of action depending on the situation at hand. Management should be flexible and streamlined to adapt quickly to the change.

NB: A manager can use any of the above approaches.

