ABSTRACT

Organizations face a huge challenge in monitoring the details, quantity, working condition, depreciation, and maintenance status of assets in their organization. The issue is faced not only by large organizations but also in smaller organizations. Assets are kept in records by means of inventory. The need to monitor these records of assets constantly is efficient management of the assets inventory of an organization to maximize the organization's value resulting in established and intangible assets to be located easily, in a more reliable and efficient manner. It helps with tracking the whereabouts, quantity, working conditions, depreciation, and maintenance status of all assets. A detailed list of all assets in the organization displaying their description, inventory number, respective location, working condition (status) and all other details will be always available.

With the advent of ever evolving technology, today's fast-paced world has adapted itself to the convenience of having data digitalized and easily accessible. This growth has influenced majority of organizations to have their very own digital database systems over the years. It overcomes the manual-based spreadsheet system, which is usually characterized by errors, loss of data, varying reports, or difference in results at stages involved and helps cut down maintenance costs by managing all the information efficiently.

The Asset Management System is a project that aims at creating an application that will be used to store data of the Organization's mobile assets, devices, fixtures, inventory, maintenance activities etc.

The front end provides an interactive forefront for the managing authority of the Organization to access the inventories information through a simple login via a website developed using HTML, CSS, PHP. The back end consists of all detailed record of assets in the organization which is achieved by creating the database using MySQL, PHP, XAMPP.

The application was tested and evaluated for usability and functionality using appropriate dummy test data and can be accessed from any terminal with Internet access and the login credentials.

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CHAPTER 1

INTRODUCTION

1.1   BASICS

Asset management refers to the process of developing, operating, maintaining, and selling assets in a cost-effective manner. Most used in finance, the term is used in reference to individuals or firms that manage assets on behalf of individuals or other entities.

It involves comprehensive and structured approach to the long-term management of assets as tools for the efficient and effective delivery of community benefit. For an organization to manage its assets efficiently all assets owned by the organization must be registered and recorded in the organization's assets inventory. Assets Inventory Management is any system that monitors and maintains things of value to an entity or group. It may apply to both tangible assets such as buildings and to intangible concepts such as intellectual property and goodwill. It is a systematic process of deploying, operating, maintaining, upgrading, and disposing of assets cost effectively.

Efficient management of the assets inventory of any organization maximizes the organization's value and makes assets easier to locate and manage.

The system employed in managing the assets inventory varies from organization to organization. Some organizations make use of the spreadsheet system to keep track of the assets they own. This method of assets management is time wasting and is prone to errors that the personnel may not even be aware he made. Other organizations make use of Assets Inventory Management software which automates the manual spreadsheet system. These software vary from organization to organization based upon the requirement of each individual organization. The requirement includes the size of the organization and the volume of they own.

The manual system employed by organizations involve the physical movement of their audit staff from office to office manually count the assets residing in each office before entering them into the spreadsheet. This method wastes time, is characterized by errors and it is difficult to keep inventory. records updated if assets are transferred

often. An outdated assets inventory register allows for the presence of ghost assets. Sometimes, ghost assets are sold off by employees in secret while in other cases are stashed away somewhere. Although these assets are no longer being used, the organization still pays for maintenance and insurance on some of them. Furthermore, as the number of asset acquisitions grows, it becomes increasingly impractical and more difficult to track the location, working status, transfers, disposals, and adjustments to these assets. To ensure an accurate, well detailed, up-to-date, and secure database of assets present in an organization, an alternative is to use a web-based inventory management system where records can be digitally archived, thereby reducing filing activity at the end of each term's end.

Fig 1.1 Structure of Asset Management System

1.2 EFFECTS & BENEFITS

An effective asset management process helps businesses monitor and manage their assets using a systematized approach. With a solid process, organizations can improve productivity and efficiency of an asset thus enhancing the return on improvement.

Key components of an effective asset management process include:

i) Preparing an asset register: An inventory list of available assets
ii) Identify asset conditions and rating system

iii) Track asset depreciation accurately at timely intervals

iv) Determine the value of assets and their replacement cost

v) Move away from reactive to predictive asset maintenance

vi) Focus more on change management to ensure database integrity

vii) Eliminate paperwork and automate tasks like data collection, asset reporting, and more.

Smart businesses don't waste time trying to complete basis and repetitive asset management tasks manually by using the same outdated process repeatedly. Investing in asset management software allows businesses to automate tedious and time-consuming asset management activities offering administration team to focus more on value-added activities.

Benefits of automating asset management:

i) Prolongs the life of your assets

ii) Aids in rehabilitating, repairing, and replacing assets efficiently

iii) Meets consumer demands with a focus on system sustainability

iv) Helps focus on activities that are critical to sustained performance

v) Enables businesses to meet service expectations and regulatory requirements

vi) Improves responses to emergencies or unexpected risks

1.3   IMPORTANCE OF ASSET MANAGEMENT SYSTEM

i) Enables a firm to account for all its assets

The process makes it easy for organizations to keep track of their assets, whether liquid or fixed. Firm owners will know where assets are located, how they are being used, and whether there have been changes made to them. Consequently, the recovery of assets can be done more efficiently, hence, leading to higher returns.

ii) Helps guarantee the accuracy of amortization rates

Since assets are checked on a regular basis, the process of asset management ensures that the financial statements record them properly.

iii) Helps identify and manage risks

Asset management encompasses the identification and management of risks that arise from the utilization and ownership of certain assets. It means that a firm will always be prepared to manage any risk that comes its way.

iv) Removes ghost assets in the company's inventory

Instances exist where lost, damaged, or stolen assets are erroneously recorded on the books. With a strategic asset management plan, the firm's owners will be aware of the assets that have been lost and will eliminate them in the books.

1.4 MySQL

A relational database management system that uses SQL (Structured Query Language). Used commonly as a web database, it may hold anything from a single piece of information to a whole inventory of accessible items. MySQL database, being an open-source Relational Database Management System (RDBMS) that employs SQL language, helps to automate data retrieval, and provides excellent assistance in PHP MySQL web application development.

Fig 1.2 My SQL

1.5 PHP

PHP (Hypertext Preprocessor) is a general-purpose program scripting language used for creating dynamic and interactive web pages. It is a server-side language that can be integrated in HTML, making it easy to add functionality to web sites without having to access other files for data.

Fig 1.3 PHP

1.6 XAMPP

XAMPP is an open-source and cross-platform virtual server solution stack bundle that includes the Apache web server, MySQL database, and PHP. The integration of PHP and MySQL requires no setup. For development purposes, you can use a personal web server to work locally from your own laptop or PC instead of an external server.

Fig 1.4 XAMPP

1.7 IMPROVISATION METHODS

Implementing an asset management system will not deliver results if the process itself is mediocre at best. So, before looking for ways to automate the process, it is critical to streamline their existing asset management practices.

Factors an organization need to focus on to improvise their asset management:

i) Understand the reason behind asset's existence
   - Purpose the asset serves
   - Reason behind procurement

ii) Gain knowledge about the asset's condition
   - Asset's current condition
   - Fulfillment of its purpose
   - Reliability

iii) See how effectively the asset is being utilized
   - Current asset delivery value
   - Fulfillment of existing expectations

iv) Identify future demands

- If there will be a change of service expectations
- Robust enough to deliver future demands

v) Assess the existing maintenance program

- Maintenance and improvement methods on the asset's lifecycle
- Effectiveness of the current asset maintenance program
- Accuracy of estimate for maintenance costs

vi) Predict depreciation rate and associated risks

- If the useful life of the asset reviewed periodically
- Difference in expectations significantly from previous estimates
- Depreciation charge for future periods adjustments
- Impact of the depreciation

vii) Forecast asset disposal

- Expected timeline for the asset to be permanently withdrawn from use
- Gain or loss from the disposal of the asset noted in the financial statement

1.8   EVALUATION

1. Systems Integration

The information collected in your asset management solution is only as useful as its application. Most packages integrate well with other systems, such as your project management software, or ERP. The more integrated your data, the more it can be used for business intelligence and predictive analytics.

2. User interface

The user interface (UI) must be accessible to everyone you expect to use it. If people find the software difficult to use, they won't. Consider your workforce and how likely or not they are to adopt this technology, bearing the future in mind as well. There may be

a balance between functionality and accessibility. Evolve the interface along with your staff by using an adaptable solution. With the capability for role-based logins—employees will only have to interact with the data they need to.

3. Support

Whichever asset management solution you choose, it will become an integral part of your organization—with the potential for significant disruption if it goes down. Before committing, find out what support is available, what the SLAs are, and how much help is provided with implementation. Every business is different—you'll likely need some assistance configuring the system for your needs such as service managers and technicians can easily remotely monitor, manage, diagnose and resolve issues for equipment in the field. It is important to find a strong technology partner that will provide continuous support.

4. Scalability & Overall flexibility

It is essential determine how great the asset management solution can scale. Licenses and implementation are the biggest issues—how easy is it to add or remove licenses. How easy is it to install or access the software on new devices. Space availability to manage different assets in the future. The last thing you want is to migrate to a new solution at a critical juncture in your organization's growth.

1.9   APPLICATION

Smaller operations may benefit from a computerized maintenance management system. The automation software assists with scheduling, management and reporting of maintenance activities. Features include handling workflows, resourcing, and routing, operating and repair guidance, and reporting and auditing.

For large operations, an enterprise asset management system provides a central platform for managing all fixed assets. It integrates asset data from across the asset lifecycle: acquisition, operations, maintenance, depreciation and renewal or replacement.

This application will be used for the management of mobile assets such as different types of infrastructure, plants, and technical devices like; electric panels, heating and