**Relational Database Implementation for New Inventory System**

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**Introduction**

Having been an IT Engineer for this organization for many years, I feel that introducing a relational database would be highly beneficial in improving the efficiency of our IT hardware and software assets. The current way and approach of using Excel spreadsheets or writing things down by hand is very cumbersome and inefficient. It is also becoming increasingly more difficult to track things and it also becomes very easy to lose track of an item.

As the company, and number of employees, grows it will be increasingly more difficult to keep track of our inventory and assets and will lead to more discrepancies in our system and information related to the assets and their assignments. This is why I think a centralized and structured relational database would be beneficial to implement. This would greatly increase the efficiency of our inventory management. Relation databases are even used in the military for asset management as stated here “The aim of the new system is to improve aircraft fleet serviceability, reliability, and readiness in order to enhance the operational status and level of readiness at the least possible costs” ("efficiency of using a tailored inventory management system in the military aviation industry," n.d.) . It would also highly decrease the number of errors from lost information or information that was removed accidentally.

**Asset Management Database**

Using a relational database would be an incredible tool used to manage our IT inventory in a structured and consistent way. A relational database, as stated on Oracles site, is “a type of database that stores and provides access to data points that are related to one another.” ("What is a relational database?," n.d.). Instead of using some sort of spreadsheet that requires manual entry we can implement a relational database. A relational database would allow us to define the relationships to our assets to help keep information about them concise. This data and relationship model can be used for different data points or elements and allow us to understand and track out assets, and inventory, much more efficiently. As an example, we can log information related to repairs, assignments or warranty history that are tied to each device. Having this kind of information integrated into the current system quickly becomes cumbersome and is highly prone to errors or false information.

This implementation of a relational database for our IT assets would allow us to capture more detailed and specific information pertaining to each item that we own. This also doesn’t just have to relate to physical hardware but could also be used for users and software keys or licenses. Some of the key information that we could potentially track in this new database would be:

* Device model, asset tags, serial numbers, purchase date, warranty expiration date
* EOL (End of Life) dates, Service history
* Software name, license keys, purchase date, software versions
* Physical locations, Assignment to company user

This level of detailed tracking information located inside of a database would allow us to complete tasks much more quickly, efficiently and effectively, the information on any of these data points could be quickly queried to pull other related information about the asset that is in our possession. This would also give us increased visibility into trends that would be noticed with our assets, and we would be able to pull reports to present to the company when needed to justify any needs or escalations.

**Benefits**

There are many benefits to tracking our assets inside a relation database management system. The first major benefit is improved inventory management. These small errors can lead to a large, expensive and unnecessary financial impact on the company. We can see what devices are assigned to what employees and what software licenses are being used by what teams or users. This information allows us to reduce errors in assignments, such as lost or untracked assets. These small errors can lead to a large, expensive and unneeded financial impact on the company. Not to mention it is also very inefficient having to write things down by hand and having everyone on the same page editing or adding information.

Another benefit would be having a detailed maintenance history. By having all the history of our assets in one place for everyone to see we can make better and more informed decisions about devices. By looking at the maintenance history we can quickly see trends in our inventory or repeated issues that are happening to the same assets. Having this information would help the team troubleshoot prior issues, warranty coverage and upgrades. IT is embedded in customer satisfaction and this increase in visibility would greatly improve our customer experience.

Lastly, would be assets lifecycle management. Having detailed information related purchase dates and software license utilizations we can make better and concise decisions on our inventory. Better put, “inventory management system is a more focused term, highlighting the use of technology to streamline processes like tracking stock levels, generating purchase orders, and providing real-time insights into inventory status.”("What is a relational database?," n.d.) . For example, by querying EOL dates of our laptops we can make better and more informed decisions about lifecycles at the company. This contrasts with someone coming up and us having to look up the information manually each time. By doing this, we can help with our department's budget and stop overspending or potentially not having a budget to replace many laptops needed.

**Conclusion**

With the advancements in technology and the ever-increasing dependence on technology, having an efficient management system for IT assets is extremely beneficial. The most prominent benefits of having an effective IT management system and database are to watch hardware costs, mitigate potential risks, tracking, and increase the overall support of our organization by ensuring we have the assets needed to support the companies' employees. Having a relation database solution implemented for our IT assets grants a robust, scalable platform for us to utilize. This will help us keep control over all assets and allow us to continue to keep management under control and continue to support newer employees in the future.

With this implementation we can also visualize and provide metrics to see the efficiency and increased management within our inventory. This will allow for better strategies to be created around our assets and help us make better decisions with our inventory going forward. With this new information and asset management capabilities our role in IT will become elevated, and we will provide a much better user and partner experience to the company. I very strongly believe, and recommend, that we continue forward with this implementation of a relation database and system for our inventory. I am more than welcome to discuss things further and listen to any feedback that might be provided.

**References**

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