Application of Material Cataloguing System in Small and Midsize Manufacturing Firms

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ABSTRACT – The purpose of this paper and case study is to provide a brief review on typical material cataloguing system in Small and Medium Enterprises (SME). The result summaries the general material catalogue management process regarding material identification, request, review and cataloguing. The cataloguing process include the process of creating new template, generating material no, making amendment to the existing parts in inventories and translating information into proper documentation format. This study can be helpful in providing guidance for material cataloguing system as a mean to store and retrieve data in order to establish an effective inventorial management.

1. INTRODUCTION

Material catalogue is a documentation system that consists of several components like raw materials and spare parts to support smooth operation and maintenance process. Material cataloguing systems is only one part of a bigger system known as Enterprise Resource Planning (ERP). One of ERP feature that stand out the most are by incorporating many complex activities such as human resources, manufacturing, financial management and supply-chain in a single automated manner. This will eventually improvise the overall activities by the means of having best practice which will aid in facilitating and build greater managerial control, contribute to lightning-fast decision making and significant reduction in overall cost of operation [1]. ERP systems provide many benefits to companies so they can meet changing expectations by providing accurate, timely, and integrated information to improve decision making [2]. These will extract all the required information in regards to process and data management. The capabilities of proper business control is demonstrated via the understanding of the business operation and through the ability of manoeuvring decision making process for the entire organization.

SMEs play an important role in global economies. Around 99 percent of the economic activities can be traced back to SMEs, which take about two-third of all jobs in the private sector. In Malaysian economy, SMEs are very important and play an important role in its development. Despite having enormous contribution, SMEs also possessed its own drawback. Compared to larger enterprises, SMEs profit less often from economies of scale. Due to low equity ratio of SMEs, they are relatively vulnerable to external events compared to larger enterprises [3]. Many ERP vendors are banking their future growth on SMEs. SAP, with its goal of doubling its market limit, is one of the of the ERP vendors which considers SMEs as its potential source of growth. The ERP market for large corporation has reached saturation point with a higher than 70% adoption rate. Hence, large ERP vendors are left with no option but to look to SMEs as the only possible target.

2. METHODOLOGY

All information for this case study was taken from a SME company who implemented material cataloguing system in their inventory management. The case study company was named YUI due to confidentiality issue and to protect its reputation. Company YUI was founded in 2002 and located in Kuala Lumpur, Malaysia. This paper provides a general insight on how company YUI implemented the material cataloguing system by using a step-by-step procedure of Material Cataloging Request and Tracking Tools (MCRSTT). All the data was taken through weeks of field study by observing the work of responsible personnel. Also, this paper imparts the process flow of material cataloguing system in terms of generating material no. for generic and specific items, creating new template and make amendment towards the existing information. All the information was translated into a proper documentation format.

3. RESULT AND DISCUSSION

Company YUI used cataloguing to establish, maintain and manage data regarding raw materials within their firm. In order to achieve smooth operation across multiple departments, YUI need to ensure that all required materials to support maintenance and operation are captured precisely. Thus far, a number of studies demonstrated that the ability of a company to disseminate information across its entire organization will lower the chance of errors created. Figure 1 shows the material catalogue management process practiced by YUI. This set of processes will be maintained and

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repeated throughout the years.

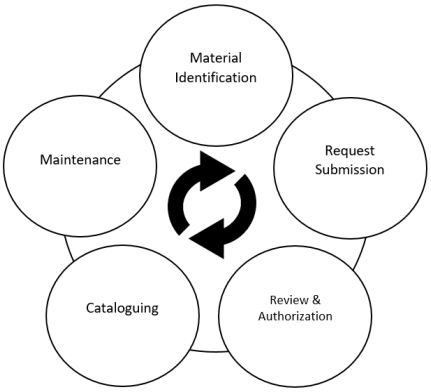

Figure 1 Company YUI material cataloguing management process

Once the raw material for cataloguing being identified, a submission request is made. YUI carried this process through a systematic internal form that encapsulate all important and compulsory data. It is crucial to include all the necessary information regarding the attributes of the parts in order to ward off any error from happening. Usually, an internal material management will started a review process to validate all the data and approved that the supplied information meets the quality requirements. This is to ensure that there are no repetition of data entry and that all tagging, numbering are correctly done.

Basically, there are three types of requests available for the user to choose. The available requests are to proceed with simulation training, to create new material template and to create new material no. Before anything, each particular user need to register their personal info for them to be able to login into the system. Training site will provide the user with necessary drill and fundamental knowledge regarding the system. If the user choose to proceed with the creation of material template or the creation of material no., they need to specify the type and characteristics for each item that they requested. They need to include all relevant information and attributes of each particular item. After the user is done, all the creation information will be translated into retrievable spreadsheet format for documentation purposes. All the documents can be access by responsible personnel for future references.

Figure 2 shows the overall flow of the material amendment and creation process from the first request selection up until completing the documentation process. Every single process undergo strict verification and authorization process to minimize the probabilities of errors. After all the necessary process taken place, YUI occasionally planned a maintenance for the material cataloguing system. As the raw materials and item parts might change from time to time, YUI thought it is important to keep the system running up to date. YUI carried out their maintenance program by orchestrate periodic audits on all the material list in its inventories. All unnecessary data will be deleted from the system. This is to ensure that the data quality is in top notch and to avoid confusion among the cataloguers.

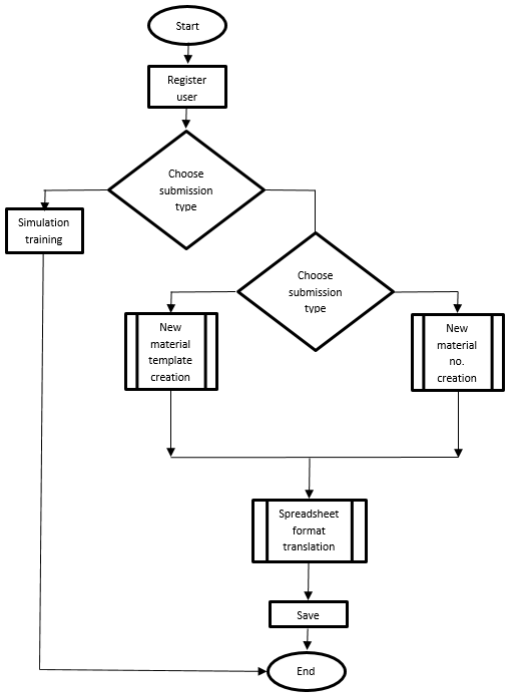

Figure 2 Overall flow of the material amendment and creation process

4. CONCLUSIONS

This paper provide brief information that circulate around the understanding of the material cataloguing process. The findings suggest that the implementation of a material cataloguing system generate a positive impact on the company performance as it provide swifter material traceability and simpler inventory management control. The usage of material cataloguing system are found to linked and relate many departments with one and another thus creating good sustainable atmosphere within enterprises. This allows better communication and avert any insignificant financial allocation through errors like incorrect parts order, rework process and extravagant resources usage.

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