

REDUCTION OF LEAD TIME IN PREPARING SHOP PACKETS USING LEAN MANUFACTURING PRINCIPLES AT SLB BATAM TECHNOLOGY CENTER / CAMERON SYSTEM



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1 Introduction

Reducing lead time in manufacturing processes is crucial for increasing efficiency and productivity. At SLB Batam Technology Center / Cameron System, the implementation of Lean Manufacturing principles has been pivotal in achieving this goal. This study focuses on the application of these principles to streamline the preparation of shop packets. By eliminating waste, improving workflow, and enhancing overall operational efficiency, we have significantly reduced the lead time required for shop packet preparation, contributing to better resource management and faster turnaround times.

2 Literature

Lean manufacturing has proven effective in increasing productivity and efficiency by shortening lead times in production processes. This study aims to deepen understanding of how lean manufacturing reduces lead time and identify potential challenges (Adesta & Prabowo, 2018).

Lean manufacturing is a method to eliminate waste during pre-production and production processes. It is highly beneficial in the manufacturing sector by scientifically reducing waste in all areas of development and production (Gupta et al., 2015).

Time is a crucial consideration in lean manufacturing. A production process is considered smooth if materials move from one process to another as quickly as possible (Arif, 2017).

Essentially, lean manufacturing is a method to identify and eliminate non-value-added activities in a process (Prayogo & Oktavia, 2015).

The application of lean manufacturing can enhance the effectiveness and efficiency of processes (Gupta, Bansal, & Goel, 2015). Lean manufacturing is a philosophy that helps companies eliminate hidden waste in their production processes (Marulanda-Grisales & Gaitan, 2018).

3 Discussion

After identifying the root cause using a SMART analysis chart analysis tool, the author decided to create a VBA macro program in Ms.Excel to automate the preparation process of shop packets. Previously, this process involved manually inputting transaction codes for each process, taking approximately 10-15 minutes per work order, but now it has been shortened to 5 minutes.

SPECIFIC

- Menggunakan program *macro* SAP untuk mengotomatiskan dan mengoptimalkan proses manajemen shop packet, sehingga mengurangi waktu yang dibutuhkan dari penerimaan *work order* sampai jadi *shop packet*.

ACHIEVABLE

- Sumber Daya :**
 - Dukungan dari black belt selaku konsultan internal perusahaan dalam pembuatan *project continuous improvement* dimana *macro* SAP termasuk didalamnya.

MEASURABLE

- Pengurangan rata-rata lead time shop packet dari 15 per *shop packet* menjadi 5 menit.
- Persentase pengurangan lead time sebanyak 66%.
- Jumlah shop packet yang diproses meningkat sebesar 14,76% perbulan.

RELEVANT

- Proyek ini relevan dengan tugas akhir penulis karena termasuk dalam *lean manufacturing*.
- Proyek ini mendukung inisiatif perusahaan untuk meningkatkan otomatiskan dan *continuous improvement*.

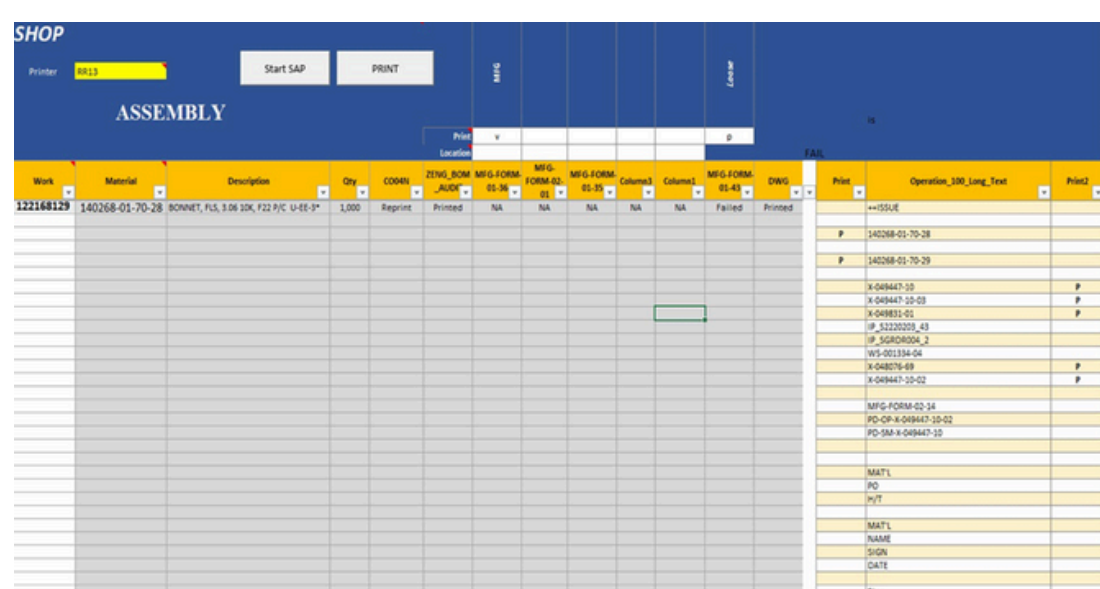
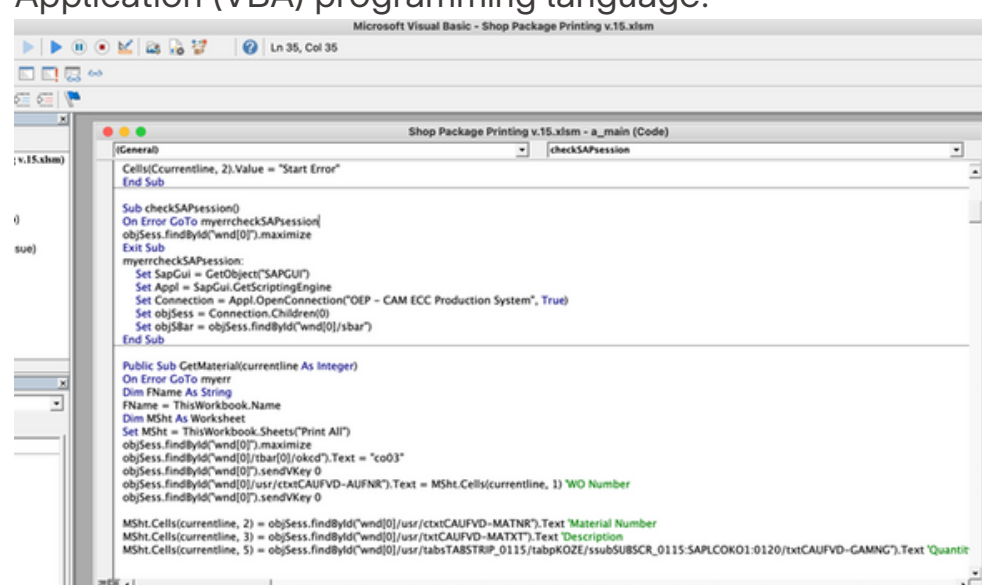
TIME-BASED

- Pembuatan *macro* SAP : 2 minggu
- pengujian dan validasi : 1 minggu
- Implementasi dan pelatihan : 2 hari
- Evaluasi dan penyempurnaan : 4 hari
- Total waktu penyelesaian proyek : 26 hari

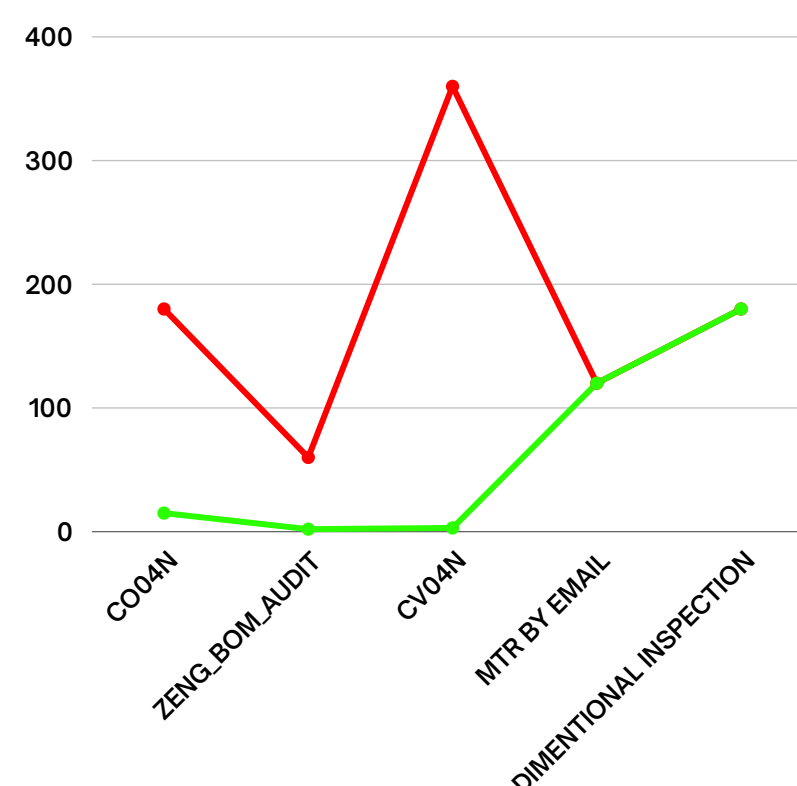
3 Discussion

Excel macros are tools that enable recording and executing a series of commands automatically. These macros can be used to automate repetitive tasks, thereby saving time and effort. Macros function like scripts that instruct Excel to perform specific actions.

After recording the print shop packet process in SAP, a script will be generated which can then be processed in Excel using the Virtual Basic Application (VBA) programming language.



Proses kode transaksi	Sebelum Macro	Sesudah memakai macro	Selisih waktu
CO04N	180 detik	15 detik	165 detik
ZENG_BOM_AUDIT	60 detik	2 detik	58 detik
CV04N	360 detik	3 detik	257 detik
MTR BY EMAIL	120 detik	120 detik	0 detik
DIMENTIONAL INSPECTION	180 detik	180 detik	0 detik
TOTAL	900 detik (15 menit)	320 detik (5 menit)	580 detik (10 menit)



4 References

Adesta, E.Y.T., Prabowo, H.A. 2018. Total Productive Maintenance (TPM) Implementation Based on Lean Manufacturing Tools in Indonesian Manufacturing Industries. International of Journal Engineering & Technology. Vol 7 (3.7), pp 156-159.

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Arif, M. (2017). Perancangan Tata Letak Pabrik. Yogyakarta: Deepublish

Prayogo, T., & Octavia, T. (2015). Identifikasi Waste dengan Menggunakan Value Stream Mapping di Gudang PT. XYZ. Jurnal Titra, Vol 1, No. 2, pp. 119 – 126

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