"IMPROVING FLOW PROCESS OF RUNNING METER INPUT FOR TIME REDUCTION IN UPDATING EACH CYLINDER AT PT SUPERNOVA FLEXIBLE PACKAGING "

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NOVEMBER, 2022

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INDUSTRIAL ENGINEERING

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Company Overview

PT Supernova Flexible Packaging is a manufacturing company engaged in the field of plastic packagingand this company was established in 1981. This company markets its flexible packaging products worldwide with its state-of-the-art equipment from cylinder manufacturing; multi-color printing; various laminating, and many other advanced finishing. This company is managed and led professionally by a highly motivated team with over 30 years of experience.

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Vision & Mission

Vision:

“To be the leading packaging industry in Indonesia, Southeast Asia, and the world, through technological developments.”

Mission:

“Individual and the company with its stakeholders grow together” PT Supernova Flexible Packaging has had purposes since establishment, which are as follows.

1. To become a global fine flexible company and to be number one in Indonesia
2. To create high quality fine flexible products and quality

Research Question

1. How to design the file of running meter view in PT Supernova Flexible Packaging that is more easily understood for users ?
2. How to design the flow process of inputting a running meter in PT Supernova Flexible Packaging that is more efficient in time reduction?

Research Objective

1. To design the view of inputting running meter file in PT Supernova Flexible Packaging that is more easily understand for user
2. To design the flow process of inputting running meter in PT Supernova Flexible Packaging that is more efficient in time reduction

Research Methodology

Initial Observation

Observe the current flow system for monitoring running meter of cylinder

Problem Identification

- Identify background and problem issued in the flow of current system
- Determine the objectives of the research
- Set the scope of assumption

Literature Study

- Monitoring
- System
- System Depelovement Life Cycle (SDLC)
- Activity Diagram

Research Methodology

Data Collectionand Analysis

- Identify the crucial parts and analyze the problems in current flow system of process for updating cylinder condition
- Provide the new design view and final flow system
- Test, evaluate, and improve until ready to implemented

Conclusion and Recommendation

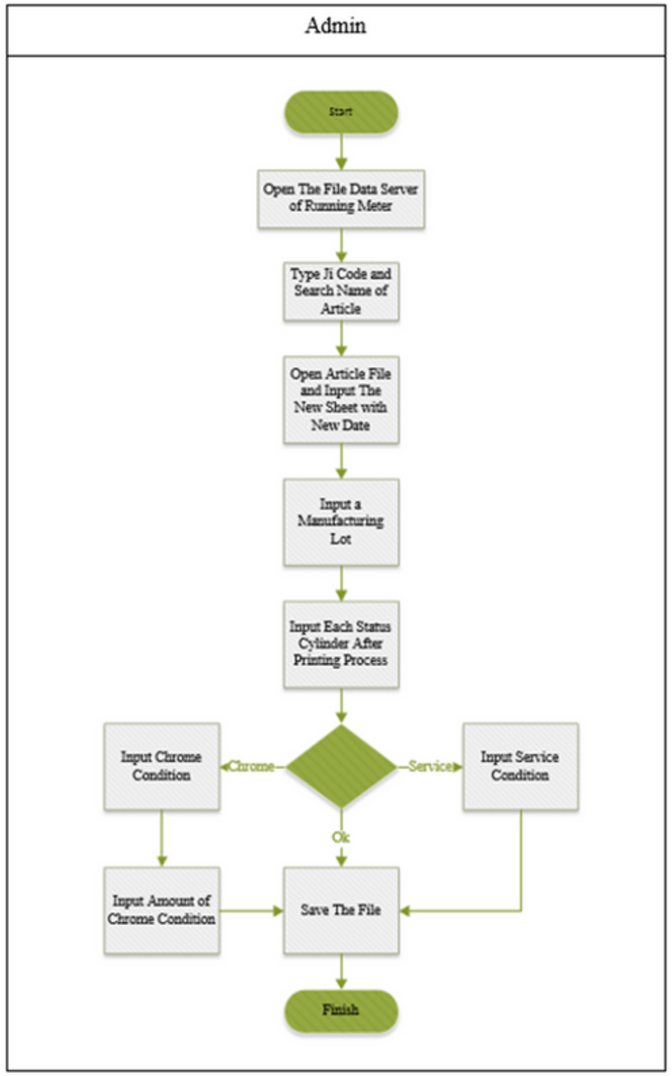
- Conclude the reasearch
- Recommend for further researches

Problem Observation

The problems in this research were identified by doing an observation regarding the current system. The system, which is still using Microsoft Excel software. Also, very hard for user to read the data carefully because the software is utilized and well developed, such as there is no monitoring for cylinders that have reached maximum running after the printing process, then for cylinders that have reached 3 times the chrome process, and cylinders that experience defects when checking or after the printing process.

Data Collection & Analysis

Current System of RM



Current View of RM

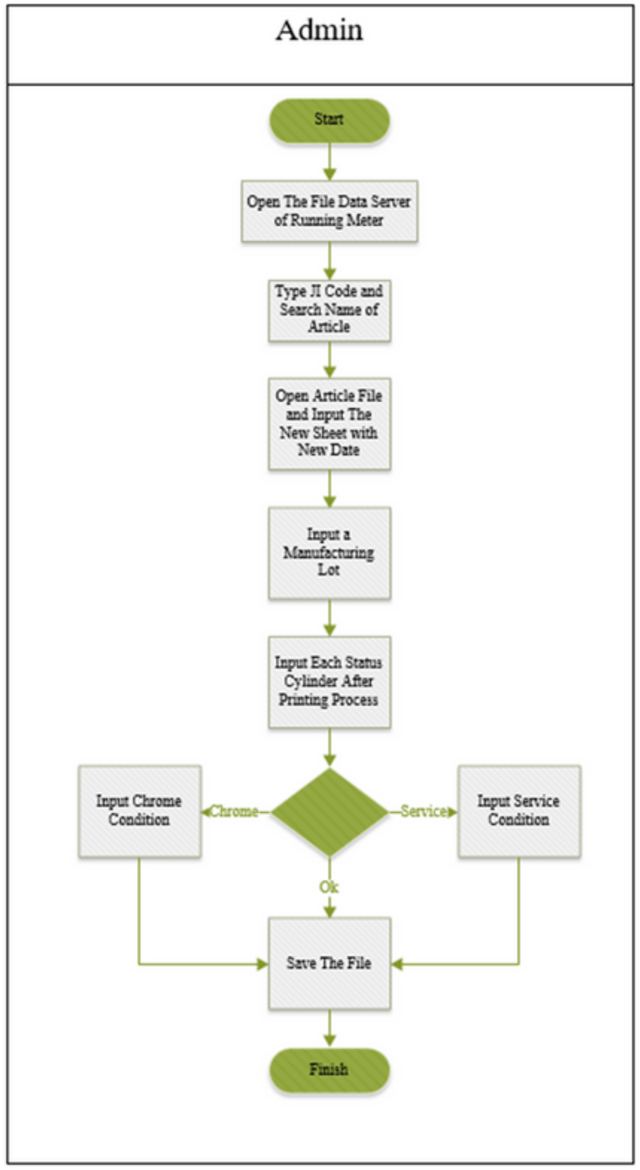
PT. SUPERNOVA FLEXIBLE PACKAGING

RIWAYAT CYLINDER FINISHED GOODS

ARTIKEL : [illegible]
UKURAN : [illegible]
NO JR : [illegible]
NO WL : [illegible]

UNIT	Black (B) / Text (T) / Separasi (S)	Kode PERUB	URUTAN WARNA CYLINDER	KODE CYLINDER (P/A/B/C/...)	KONDISI CYLINDER SELESAI PROSES SEBELUMNYA										KONDISI CYLINDER SELESAI PROSES TERAKHIR							
					Tanggal Engrave Cylinder	Status Cylinder (Lama/Baru)	PROSES DI MESIN :		CR03						PROSES DI MESIN :		CR03					JUMLAH RE-CHROME SETELAH PRINTING
							TOTAL AKUMULASI RUNNING (SERVICE)	TOTAL AKUMULASI RUNNING METER (CHROME)	Permintaan Tindakan Terhadap Cylinder				REALISASI				RUNNING (METER)	TOTAL AKUMULASI RUNNING METER	TOTAL AKUMULASI RUNNING METER (CHROME)	Permintaan Tindakan Terhadap Cylinder				
									OKE	CROM	SERVICE	KLADI	AH CHI	TANGGAL	KETERANGAN							
1	T	1	BLACK	Polos		Baru											0	0				Ga Chrome
1	T	1	BLACK	A	13/10/20	Baru										210,000	210,000	210,000	Y			Ga Chrome
2	S	1	SGREEN	Polos		Baru											0	0				Ga Chrome
2	S	1	SGREEN	A		Baru											0	0				Ga Chrome
2	S	1	SGREEN	B		Baru											0	0				Ga Chrome
2	S	1	SGREEN	C	13/10/20	Baru										45,000	45,000	45,000			Y	Ga Chrome
3	S	1	SRED	Polos		Baru											0	0				Ga Chrome
3	S	1	SRED	A	13/10/20	Baru										210,000	210,000	210,000			Y	Ga Chrome
4	S	1	YELLOW	Polos		Baru											0	0				Ga Chrome
4	S	1	YELLOW	A	13/10/20	Baru										210,000	210,000	210,000	Y			Ga Chrome
5	S	1	WHITE	Polos		Baru											0	0				Ga Chrome
5	S	1	WHITE	A	13/10/20	Baru										210,000	210,000	210,000			Y	Ga Chrome
6	S	1	WHITE	Polos		Baru											0	0				Ga Chrome
6	S	1	WHITE	A	13/10/20	Baru										210,000	210,000	210,000			Y	Ga Chrome
6	S	1	WHITE	B		Baru											0	0				Ga Chrome

Proposed System of RM



Proposed View of RM

PT. SUPERINDOYA FLEXIBLE PACKAGING

RIWAYAT CYLINDER FINISHED GOODS

ARTIKEL : [illegible]
[illegible] : [illegible]
[illegible] : [illegible]
[illegible] : [illegible]

UNIT	Block (B) / Test (T) / Separasi (S)	Max Running Meter (Before Chrome)	Kode PERUB	URUTAN WARNA CYLINDER	KODE CYLINDER (P/A/B/C/...)	KONDISI CYLINDER SELESAI PROSES SEBELUMNYA – Tanggal Engrave Cylinder	Status Cylinder (Lama/Baru)	PROSES DI MESIN : – TOTAL AKUMULASI RUNNING (SERVICE)	TOTAL AKUMULASI RUNNING METER (CHROME)	CR05 – Permintaan Tindakan Terhadap Cylinder: OKE	CROME	SERVICE	KLAIM	REALISASI: JUMLAH CHROME	TANGGAL	KETERANGAN	KONDISI CYLINDER SELESAI PROSES TERAKHIR – PROSES DI MESIN : – RUNNING (METER)	TOTAL AKUMULASI RUNNING METER (SERVICE +800.000)	CR05 – TOTAL AKUMULASI RUNNING METER (CHROME)	Permintaan Tindakan Terhadap Cylinder: OKE	CROME	SERVICE	CLAIM	JUMLAH RE-CHROME SETELAH PRINTING
1	7	200.000	2	BLACK	Polos	[illegible]	Baru	1.188.000	0		1			3				1.188.000	0					3
1	7	200.000	2	BLACK	A	[illegible]	Baru	396.000	0					1			528.000	924.000	528.000		1			2
2	5	400.000	2	S.GREEN	Polos	[illegible]	Lama	1.635.000	0		1			6			40.000	1.675.000	40.000		1			7
2	5	400.000	2	S.GREEN	A	[illegible]	Baru	900.000	0					2				900.000	0					2
2	5	400.000	2	S.GREEN	B	[illegible]	Baru	621.000	0		1			2			430.000	1.051.000	430.000		1			3
2	5	400.000	2	S.GREEN	C	[illegible]	Baru	0	0					0				0	0					0
3	5	400.000	2	S.RED	Polos	[illegible]	Lama	1.740.000	0		1			5				1.740.000	0					5
3	5	400.000	2	S.RED	A	[illegible]	Baru	612.000	0					2			528.000	1.140.000	528.000		1			3
4	5	400.000	2	YELLOW	Polos	[illegible]	Lama	1.956.000	0		1			6			528.000	2.484.000	528.000		1			7
4	5	400.000	2	YELLOW	A	[illegible]	Baru	396.000	0					1				396.000	0					1
5	5	400.000	2	WHITE	Polos	[illegible]	Lama	1.956.000	0		1			6				1.956.000	0					6
5	5	400.000	2	WHITE	A	[illegible]	Baru	396.000	0					1			528.000	924.000	528.000		1			2
6	8	300.000	2	WHITE	Polos	[illegible]	Lama	1.380.000	0					5			528.000	1.908.000	528.000		1			6
6	8	300.000	2	WHITE	A	[illegible]	Baru	972.000	0		1			2				972.000	0					2
6	8	300.000	2	WHITE	B		Baru	0	0					0				0	0					0

Note :

Apabila sudah lebih dari 800.000 mtr otomatis akan berwarna MERAH harap dibuatkan FPC

Jumlah running meter (chrome) sudah melebihi standart maka angka akan berwarna MERAH cylinder harus dibuatkan form rechrome (walaupun permintaan dari produksi menyatakan OK (dari

Apabila sudah lebih dari 3X RECHROME otomatis akan berwarna MERAH harap dibuatkan FPC

Time Consumption of Inputting Running Meter of Cylinder

No.	Open File Sharing Server of Running Meter	Finding Article With Typing JI Code	Input No ML	Input No Printing Machine	Input 1 set Cylinder After Process without Spare In Printing Machine	Input 1 set Cylinder After Process with Spare In Printing Machine	Total (in second)
1	5	6	4	5	258		278
2	4	7	3	4	255		273
3	3	6	5	3	249		266
4	4	8	4	4		356	376
5	4	7	5	3		352	371
6	5	6	4	5		348	368
Grand Total							1932
Average							322

Time Consumption For Checking in ERP and service in FPC

No.	Open App and Find JI Calculation Option in ERP	Type JI Code and Finding JI Sheet Fine	Take a Look on Type of Product Last Updated	Total Time
1	20	6	2	28
2	18	7	3	28
3	18	7	2	27
4	21	4	2	27
5	19	8	3	30
Grand Total				140
Average (in second)				28

No.	Open Warehouse Monitoring Website and FPC Online Option	Type The JI Code and Changed Code of	Input The Cylinder Problem (Claim/Service)	Total
1	10	9	28	47
2	11	7	32	50
3	12	8	31	51
4	13	9	32	54
5	10	8	30	48
Grand Total				250
Average				50

Time Consumption of Inputting Running Meter with Proposed system

No.	Open File Sharing Server of Running Meter	Finding Article With Typing JI Code	Input No ML	Input No Printing Machine	Input 1 set Cylinder After Process without Spare In Printing Machine	Input 1 set Cylinder After Process with Spare In Printing Machine	Total (in second)
1	5	6	4	5	199		219
2	4	7	3	4	192		210
3	3	6	5	3	195		212
4	4	8	4	4		283	303
5	4	7	5	3		279	298
6	5	6	4	5		280	300
Grand Total							1542
Average							257

Time Consumption Comparison of Current System vs Proposed

No.	Total Time of Input and Monitor the Cylinder Condition Before Improve (In Second)	Total Time of Input and Monitor the Cylinder Condition After Improve (In Second)
1	278	219
2	273	210
3	266	212
4	376	303
5	371	298
6	368	300
Average	**322**	**257**

Conclusion

The cylinder update process is a very crucial input process for the production department. And an admin who inputs and updates the data has another job desk in one full day.

In the data input process, which is still very manual, based on observations, the previous running meter input process can take up to 5 minutes 22 seconds per one product name and that does not include the cylinder input process with service requests and after applying the formula and design flow process from the author, it can reduce time input to 4 minutes 17 seconds

No.	Total Time of Input and Monitor the Cylinder Condition Before Improve (In Second)	Total Time of Input and Monitor the Cylinder Condition After Improve (In Second)
1	278	219
2	273	210
3	266	212
4	376	303
5	371	298
6	368	300
Average	**322**	**257**

Recommendation

This research has a limitation of time. However, the proposed system still requires further research and development. Several of the recommendations by the author will be stated as follows.

1. Develop the proposed system in terms of making all data seem detailed and more effective.
2. Provide information to the user how to read
3. Develop a system that can store all the history of running meter data as well as create a cylinder process that is automatically serviced in the system without going through several other processes and system

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THANK YOU