

Report On
Implementation of Automation System to Prepare Factory Report

By

Tanvir Mahmud
ID: 14304026

An internship report submitted to the BRAC Business School in partial fulfillment of the requirements for the degree of Bachelor of Business Administration

BRAC Business School
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Declaration

It is hereby declared that

1. The internship report submitted is my own original work while completing degree at Brac University.
2. The report does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate referencing.
3. The report does not contain material which has been accepted, or submitted, for any other degree or diploma at a university or other institution.
4. I/We have acknowledged all main sources of help.

Student's Full Name & Signature:

Tanvir Mahmud

ID: 14304026

Supervisor's Full Name & Signature:

K. M. Nafiul Haque

Lecturer, BRAC Business School

BRAC University

Letter of Transmittal

K. M. Nafiul Haque

Lecturer,

BRAC Business School

BRAC University

66, Mohakhali, Dhaka-1212

Subject: Implementation of automation system to prepare factory report

Dear Sir,

This is my pleasure to display my entry level position provide details regarding' Implementation of automation system in preparation of factory report on 'Purbani Group', which I was appointed by your direction.

I have attempted my best to finish the report with the essential data and recommended proposition in a significant compact and comprehensive manner as possible.

I trust that the report will meet the desires.]

Sincerely yours,

Tanvir Mahmud

ID: 14304026

BRAC Business School

BRAC University

Date: January 9, 2020

Non-Disclosure Agreement

This agreement is made and entered into by and between Purbani Group and the undersigned student at Stanford Student.....

Acknowledgement

It is my pleasure to acknowledge that, implementing the idea of automation system on factory production report preparing was really a nice one for me. From which I have earned a wonderful experience and have learned many things.

All praises to the Almighty Allah who has showed His kindness and I have got a chance to make a complete report on a well-known organization named Purbani Group. And also I thank the almighty to give me the time and strength to complete my internship report properly.

As a part of my studying Business Administration, my internship instructor of BUS 400 had assigned me to prepare a report on 'Implementation of automation system to prepare factory report'. First of all, I would like to express my deepest gratitude to my honorable faculty Mr. K. M. Nafiul Haque, of BRAC Business School, BRAC University for his valuable guidelines through my university life and whole the internship period. His painstaking effort at importing his students with the necessary skills and expertise goes far beyond his responsibilities as a teacher, and I personally very grateful to him.

I would also like to thank my organizational supervisor all the colleagues who helped me a at my workplace.

I also like to thank those, who helped me by giving their valuable time, direction and information to make the report in an appropriate way.

Executive Summary

Factory report automation is sophisticated system where system collects, summarizes and processes data for its end user in a formatted and organised way. Unlike manual system where data need to be collected from variety of sources, then processed in a manually and finally reported to higher management, it is designed in such way where system collects data and information from different sources, processes and stored. It ensures highest level of accuracy and privacy. Saving time and cost, the factory report automation system is a part of the business process automation system.

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List of Acronyms

KTL	Karim Textiles Limited
PFS	Purbani Fashion Limited
PFL	Purbani Fabrics Limited
PYDL	Purbani Yarn Dyeing Limited
KSML	Karim Spinning Limited
PRSL	Purbani Rotor Spinning Limited
PSSL	Purbani Synthetic Spinning Limited
STML	Shohagpur Textiles Mills Limited

Chapter 1

Introduction

1.1 Background of the Study

With the growth of the 3rd industrial revolution automation in every sphere rises in incredible speed. Unlike the previous century factory production and its subsequent process have been automated surprisingly. Information and its superb technology have made it very easy to make any system automated. Technology reduces a lot of time and labor as well as enhances accuracy and efficiency. Technology enabled automation can simplify a business process and achieve digital transformation to businesses.

Business automation can be implemented in a number of business areas like accounting, sales-marketing, production line and HR-Admin. There will be implemented a system where unstructured sets of data will be collected, processed and reported to its user of the information. (Islam, 2012)

In my office where I work for factory reporting process, I have implemented the automation of the process. Previously there was no use of any organized technological system where reporting process will be more sophisticated and timely. Now with the aid of the technology I can collect data from a variety of sources process and finally can report to its subsequent destination with no hassles and mistakes. In this documentation I would like to show a bit more about this interactive arrangement. There I would bring up the previous process of data processing and reporting where chances of inaccuracy was too high and elaborate the present data management and reporting system.

1.2 Objectives of the Study

The primary objective of this study is to innovate an automation system model for producing factory data report without any type of manual processing.

1.3 Limitations of the Study

Limitation comes automatically in the way of doing something. A task large or small must have to face some limitations in its completion. In a running process sometimes various things and working incentive may be necessary but I don't get it all. Those things could be more helpful for my work but I may not have it for several reasons are called limitations. In the process of completing this report, some limitations were identical. They are as follows:

- The major limitation of this study is, I could not test and run this automation model in ODOO system.
- Another limitation is, the technical team of Purbani Group are very much busy with their work. As a result, I got a short time for direct conversation with them for my queries to whether is it suitable for the current situation of processing factory report.

Chapter 2:

Organizational Information

2.1 Background of the Organization

Purbani established in 1973 one of the biggest companies in Bangladesh with 100% export oriented textile manufacturer and doing their business more than 45 years with good reputation locally and globally. The title Purbani Group is holding twelve business concerns involve in in spinning, yarn dyeing, fabrics manufacturing, readymade garments, agro process and so on. The philosophy of this company is to become a good corporate citizen and a crucial contributor to the national economy by playing a major role in creating employment and diminishing poverty.

2.2 Concerns of Purbani Group

Karim Spinning Mills Limited (KSML)

It was established in 2002 in Gazipur Konabari. It is near the fabrics and apparel manufacturing units designed to produce yarn to supply the necessary requirements of the fabric manufacturing factory.

Products: Cotton yarn.

Shohagpur Textile Mills Limited (STML)

Shohagpur Textile Mill is the pioneer of in producing Melange Yarn in Bangladesh. It is situated on the bank of Sitalkkha river which provides natural humidity crucial for spinning.

Products: Melange Yarn, Fancy Yarn, 100% cotton Yarn etc.

Purbani Rotor Spinning Mills Limited (PRSL)

This factory produces acrylic-cotton, acrylic, acrylic-wool blended yarns to fulfil the demand of sweater industry. PRSL situated in Gazipur.

Products: Acrylic yarn.

Purbani Fabrics Limited (PFL)

This unit manufactures finished fabrics to fulfil the demand of apparel manufacturing unit. It uses European technology to produce 100% knit fabrics. It is situated besides KTL in ensuring a swift and smooth supply of to the group's factory.

Products: Knitted Fabric, Single Jersey, Rib etc.

Purbani Yarn Dyeing Limited (PYDL)

This factory is situated in Gazipur and involved yarn dyeing and fabric dyeing. It was not established to only fulfil the requirement of PFL and also provides the necessity of other manufacturing companies. Most of the production is the requirements from sub-contract.

Products: Dyed Yarn, Cotton Fiber.

Karim Textiles Limited (KTL)

It was established in 1988 with a 32 years of experiences in garments manufacturing. KTL bears good fame in garments manufacturing in Bangladesh. It involves in garments sewing and printing of Purbani Group. KTL adopted all the modern technology to ensure the highly efficient production.

Purbani Fashion Limited (PFS)

Like Karim Textiles Limited it adopted modern technology. It is an another garments and sewing unit of this group. PFS is single floor factory which ensures the huge safety to the workers and the factory building in fire accidental issues.

Purbani Agro Processing Limited

Purbani group started the agro business early in 2015. Purbani Agro Processing is trying to expand its business mainly in three fields like fisheries, plantation and dairies. It is in initial stage and currently acquisition of lands to be more developed in this industries.

Purbani Fisheries

Purbani Fisheries was established back in 1979. It started its business at Cox's Bazar with only one processing plant. Purbani Fisheries processes raw fish into dehydrated salted fish for export to foreign countries. Purbani Fisheries was awarded National Export Trophy in as the recognition of highest fish products exporter in Bangladesh for the fiscal year of 1996 – 1997.

2.3 Organizational Organogram

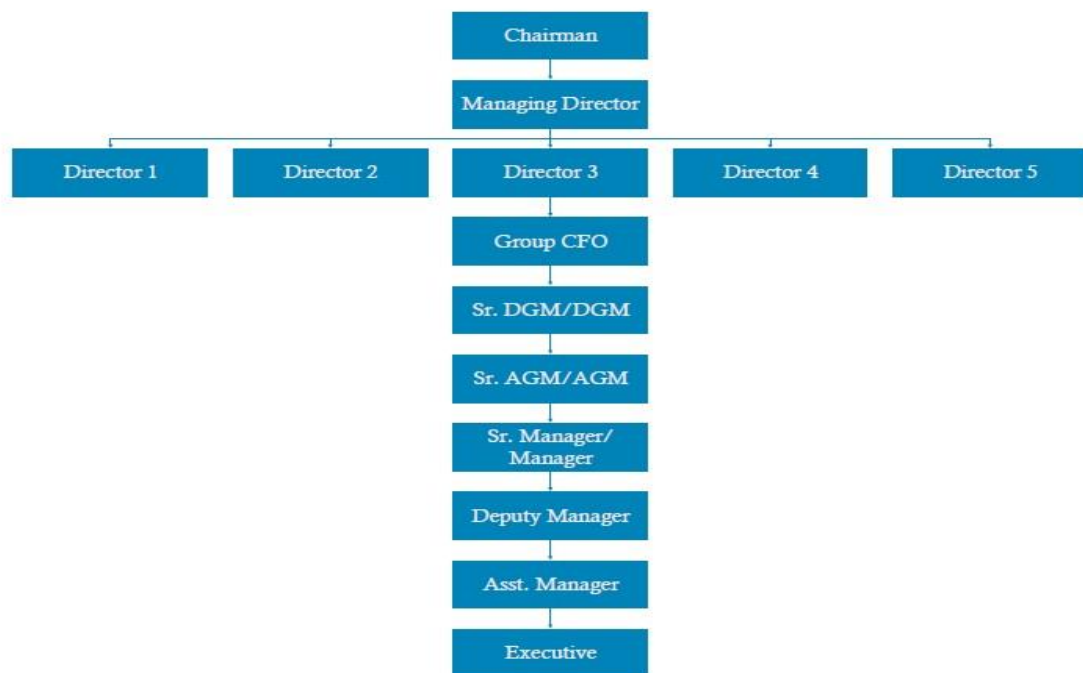


Figure 1: Basic Organogram of Purbani Group

2.4 Departments of the Organization

- Accounts and Finance
- Internal Audit
- Commercial
- Marketing
- Procurement
- Customs
- Incentive
- HR and Admin
- IT

Chapter 3:

Main Body

3.1 Present Process of Reporting

In Purbani Group, previously I had to follow a multiple number of steps for collecting, sorting, summarizing and presenting data to prepare a meaningful report for its administrative user of the information. The process includes:

1. **Collection of data:** Data come from 9 production factories. The data are mostly of production, cutting, efficiency, returns, packing and finishing, number of in house operator and sub contract order, running machines, overtime details, and number of shipments, energy consumption, opening stock, finish stocks and so on.
2. **Sending data through email:** In this phase data are written down in mail body or spreadsheet then it has been sent to head office. An HR officer receives those mails from different factories. Those mails contain the data of previous day report.
3. **Compilation of data from email:** When emails arrive from different sources. It needs to be summarized and sorted. Then it has to be complied with a formatted file. Then calculations are made to make them in meaningful information. And finally reports are prepared from this information.
4. **Sending Report to Management:** Once detailed report is prepared it is sent to the management so that they can see the overall operational progress and make necessary decision in time.

3.2 Disadvantages in Current (Manual) Process:

- **Error in Data Compilation:** in such manual process there occur some errors in data compilations. There have been mistakes in data calculation also.
- **Consumes a lot of Time:** When collected data manually there requires a lot of time also. Data are supposed to be arrange from many emails arrived from factories. So the whole process consumes a good amount of time.
- **Timely Submission:** In manual system one need to collect and prepare data then it is sent to its management. Sometimes it cannot be submitted time due to volume of data and its processing time.
- **Communication Gap:** While collecting data from mails and other sources there might be happened some miss-communication to its sender. Sometime email cannot get reached in mailbox or faces some other technical problem (i.e.) file attachment, delay in loading. There creates a communication gap between information receiver and sender
- **Lack of Data Comparison from Management:** In such system it cannot be possible to provide meaningful report to management where management can compare data and information in managerial approach.
- **Problem in Decision Making:** While manual process does not provide any opportunity to its user of the information, then it would be a problem for making decision.

- **Lack of Proper Storage:** In such manual process of reporting, there arises the vital issue of data storage and maintenance. It would be difficult to find old data from archive if there are no proper data processing and storage.

Chapter 4:

Automation

Here in Purbani Group, ODOO business software solution has recently been implemented. It is well reputed business solution in the world. It automates the business process. This system has many modules that are integrated in different department of the business. Basically the software system is cloud based so there is no worry of storage and security. It has a feature of multilevel user access so there maintains high level of privacy.

4.1 Brief Description of the Automation System:

Purbani Group has recently installed ODOO business software solution for their organization. This solution is reputed in the arena of business automation. The solution offers its multiple product packages to its clients like typical or customized. Purbani Group has purchased the customized version for itself where it will get the benefit to customize the software according to its operation.

This solution has multiple modules. The key modules and its brief descriptions are given below:

- **Accounting:** Manages all receipts, payments, invoices, vouchers. Posting to ledgers and others charts of accounts. Generates all sorts of financial reports like financial statements and balance sheet. It also aids for business taxation and other compliance.
- **Administration:** It helps to manage different type of administrative works.

- **Product Catalogue:** This module helps to categorize products to ensure its proper utilization.
- **Human Resource Management:** Obviously this is one of the important modules. It manages the records of attendance, recruitment, leave management and other critical HR management tasks.
- **Sales CRM:** For the marketers this module helps a lot. Customer Relationship Management (CRM) track every clients so that no leads can be missed out.
- **Production & Manufacturing:** In Purbani Group this module plays a vital role for production process and its reporting.
- **Payroll Management:** This manages salary and increments. With the aid of this automation system this saves a lot of time of manual payroll activities.
- **Merchandizing:** This is one of the interactive modules in business automation process. For merchandiser this module saves their lot of time.
- **Procurement:** Manual process of procumbent system is so complex and lengthy. So with the touch of this system the steps of procumbent system become more flexible and transparent.
- **Warehouse:** Stock management can be done with the help of this system. Management can track about the stock and its movement. So this is another important module in automation system.

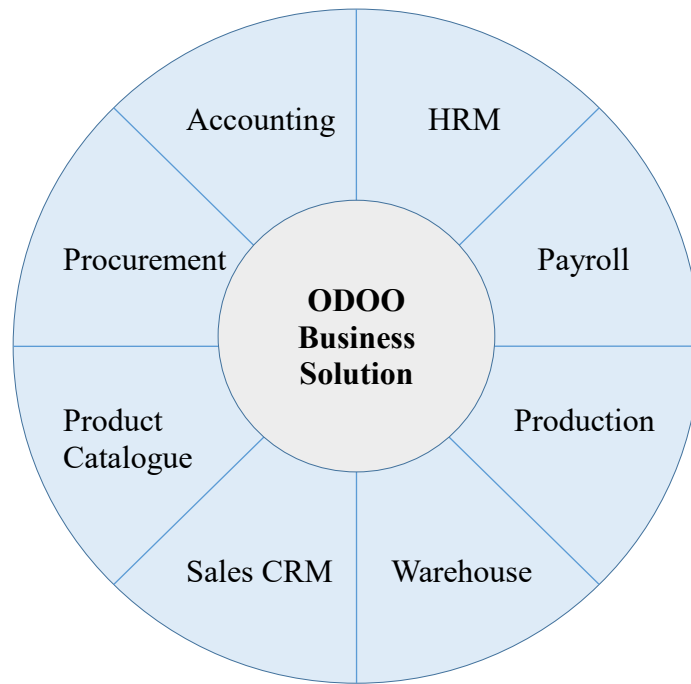


Figure 2: ODOO business solution modules

4.2 Automation Process

In early days, discussed previously, there had to work a lot for reporting to management. There were also chances for mistakes and manipulation. But with the help of ODOO business solution all process is made automatically without much human interaction. So the significant process changes are being shown here:

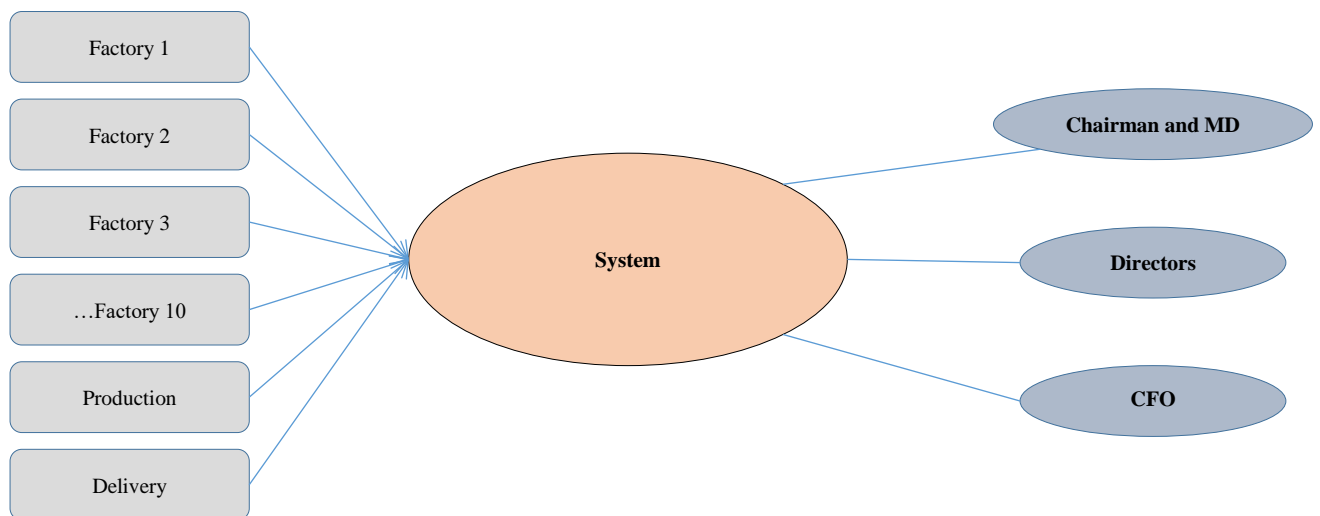


Figure 3: Flowchart of Reporting Process Automation

4.3 Critical Analysis of Automation System Model

Actually Odoo is a multi-tenant architectural Enterprise Resource Planning (ERP) system. It is an open source system so anyone can make customizations according to their organization. Odoo has compact features ERP also. Purbani Group preferred the paid customized version. Some technical features of Odoo system are given below:

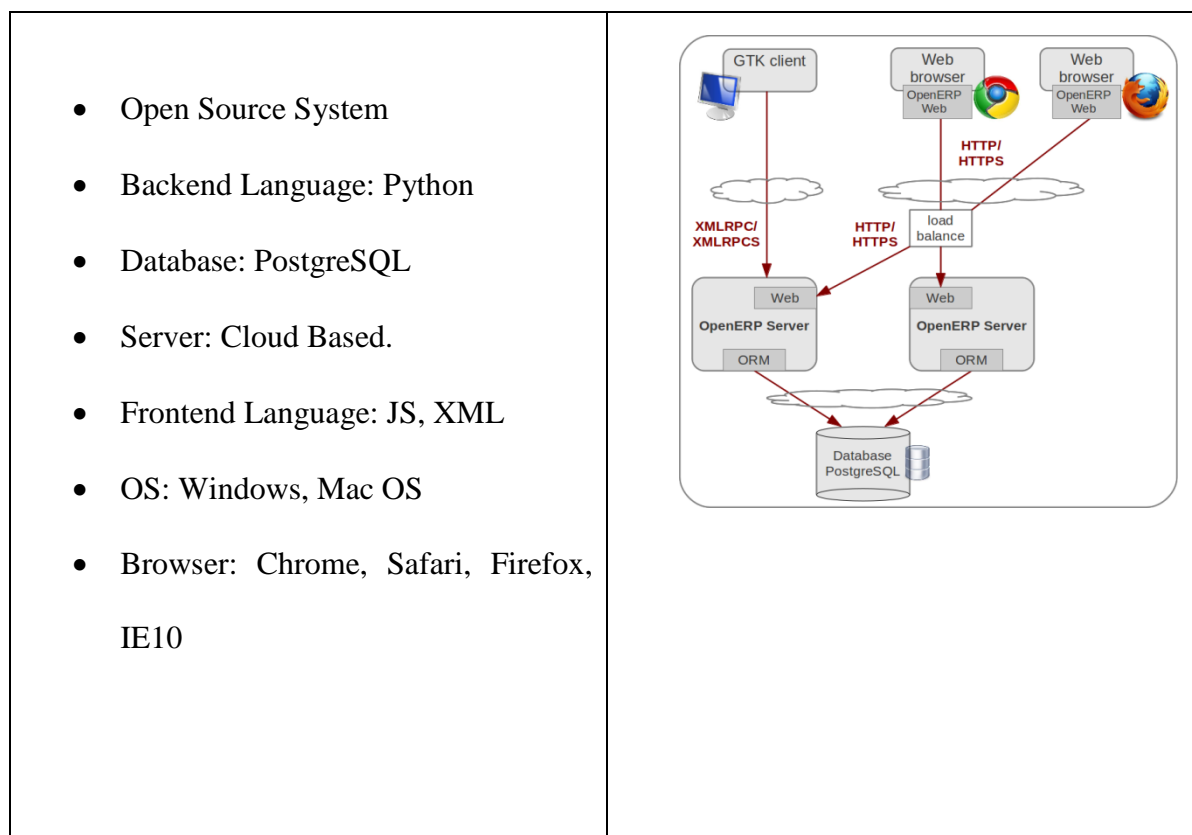


Figure 4: Odoo Technical Diagram

In Odoo system, there are many modules. The number of users is defined by the organization. Every user has their own access credentials. Odoo has **multilevel access features** where one

can see and function according to his predefined access area. So management can setup a very good establishment of data and system security.

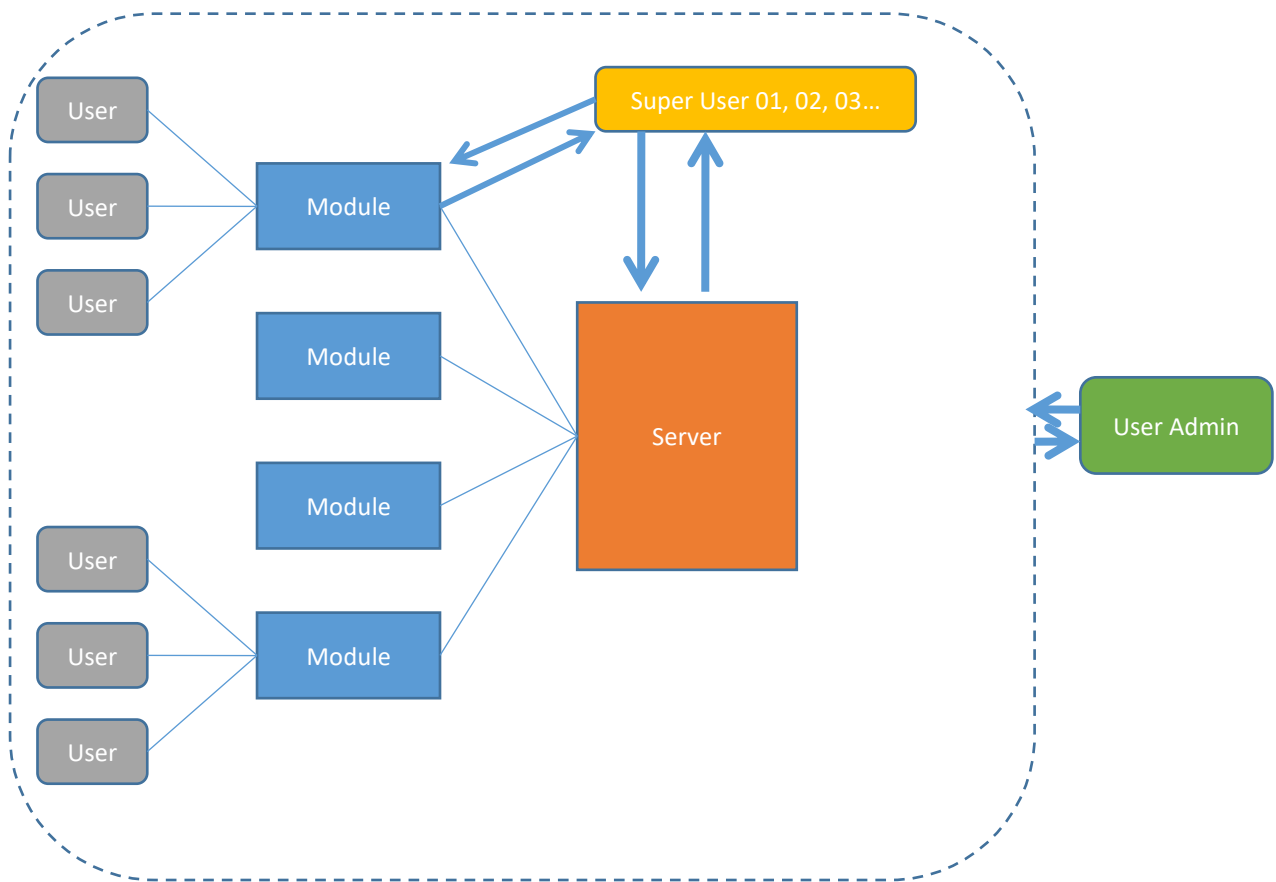


Figure 5: Automation process

In factory and warehouse, managers or responsible personnel generally input data in this system. They can only input or access at certain level of area. For example, a supervisor in ‘Factory A’ inputs the total amount of raw materials for production, manager in Factory B input their total wastage. So in such a way there will be a good number of useful data in the system. Odoo then processes and stores the data in cloud. When higher management gets access from their user level they can see what they want to like total amount of wastage, total amount of raw materials. They can access and supervise any module. Finally, there is a user admin who have the supreme control on this system. Generally, maintenance engineer takes this responsibility. Beside this actually the super users are the main data users. They can also

set access of other users. Super users can look after the activities of the other users. Generally General Manager (GM), Executive Directors, and other directors are super users. They need to access in different level. They need the information of all activities in the organization as they are the main decision makers. So they need a system where they can get data and take decision within a short time with the aid of business automation.

4.4 Dashboard Model of Auto Generated Report

	Cutting	Sewing	Production	DHU	Dyeing	Ring	Finishing	Packing	Auto Coro	B.T.	Delivery	Productivity
KTL	25,335	38,139		18								61.10%
PFS		6,553										34.89%
PFL					17,236		19,364				9,897	
PYDL			8,038									
KSML						16,829	16,829	16,829			35,843	90.72%
PRSL								10,997	2,751	8,250	5,375	90.14%
PSSL						12,000	12,000	12,000			10,806	92.00%



Figure 6: Dashboard model of auto from auto generated report

In the above figure the data from seven factories such as KTL, PFS, PFL, PYDL, KSML, PRSL, PSSL (Factory names are written as an acronym) are shown as a dashboard of the new automation system.

This dashboard will be generated automatically when the data arrive in the server. The management can see this dashboard by clicking the expected date. Here the dashboard will represent the most crucial data in the system. Therefore, the management can critically analyze the data. It will make easier for management to make accurate decision for the future.

Chapter 5

5.1 Findings

The way of preparing the factory currently is not validated in this modern digitized era. The persons who makes it he has to be always careful about receiving mails from factory personals. On the other hand, it is the responsibility to prepare the report within 1.5 to 2 hours after receiving all mails. Company has to pay this person for this duty. As a result, automation of preparing factory report is perfect solution in this situation. But a perfect automated data cannot be implemented currently because the ODOO system is not sync with factory machineries to count the production. In addition, packing, shipment, cutting data has to be filled manually by someone to input those data into the system. Therefore, perfect automated data process cannot be implemented in this current situation.

5.2 Conclusion

The main purpose of any automation system is to reduce human labor, costs and saves time in business process. Automation in factory report management ensures an accurate, clear, understandable and reliable report timely. Higher management can also have the full control over the information as well as the business activities. Automation system also can save the additional cost of maintain employee.

5.3 Recommendations

As a recommendation it should be stated that management has to be realized, ideally an employee from HR department should not be responsible for preparing factory report. Since HR personnel has own responsibilities to do therefore, to maintain proper work distribution within the organization the automation system should be implemented immediately.

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