

(IN)EFFECTIVENESS OF ERP AT PRISTINE PACKAGING

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Abstract

Enterprise resource planning (ERP) software integrates all functional areas of an organization. It is a business process management software that provides an integrated view of core business processes using common databases. It enables real-time availability of information related to entire organization thus paving the way for faster and scientific decisions. However, ERP implementation and subsequent upgradation necessitate a significant quantum of resources which can take place only with sincere commitment from top management. Researches prove that more than 50% ERP implementation do not succeed due to various reasons i.e. people, process and technological. In majority of such failures, people and process issues cause more failure than technological reasons.

Case '(In) Effectiveness of ERP at Pristine Packaging' highlights one such failed (at least partially) implementation in a medium scale manufacturing firm. Deeper analysis of case substantiates the above conclusion that predominant factors for ERP failure are people and processes. Case also raises questions as to what business and technical strategies can be adopted by the management of PPIP at this stage when new ERP i.e. Microsoft Dynamics exhibited only 20% improvement over the previous ERP - Microsoft Navision.

Keywords:

ERP, SME, Navision, Outsourcing, Project Management

1. INTRODUCTION

Pristine Packaging India Private Limited (PPIP)¹, Faridabad is a wholly owned subsidiary of Pristine Packaging, Italy. Established in the year 1992, PPIP is a medium sized manufacturing firm with a turnover of INR 180 crores. To integrate the functions of its eight departments, Oracle ERP was deployed in year 1996, which was replaced by Microsoft Navision ver.3.7 in year 2002. In year 2011, Navision was upgraded involving many change management processes like training personnel, migration of data from previous version, pilot testing and final implementation. Despite such massive exercise, effectiveness of the upgraded version of the system is a concern for the management. Mr. Ram Murthy, MD is unable to figure out what has gone wrong and what can be done at this stage.

2. PRISTINE INDIA

In 1992, Pristine Packaging entered India and established a production plant in Faridabad. PPIP, a wholly owned subsidiary of Pristine Packaging, Italy has its regional sales offices in Hyderabad, Dibrugarh, Jaipur and Pune. Its product portfolio includes steel and plastic strapping, wrapping, taping, protective packaging, consumables, tools and accessories. PPIP employs 160 employees. It has a competent team of trained professionals

for after sales service of some of products supplied by Pristine Packaging, Italy. It serves leading companies of country in automotive, electronic appliance, metals, pharmaceuticals and construction industries.

3. ORGANISATION STRUCTURE

PPIP, Faridabad has a functional structure with eight departments - HR, Marketing, Finance, Project Management (PM), Operations, Quality, Design and Engineering. Information technology functions of PPIP are carried out by a dynamic team from Pristine IT Solutions, an independent IT company of Pristine Group. Pristine IT Solutions headquartered in Gurgaon, Haryana has a flat organisation structure. It has integrated yet independent teams to support Pristine group as well as external customers.

The IT team deployed in PPIP has about 10 employees with a designated manager (on payroll of Pristine IT Solutions). This team comprises of core and auxiliary members. Core members are critical and almost permanent resources who understand the business needs of PPIP and hence are capable of providing strategic IT solutions. Auxiliary members in contrast are re-located as per the needs of various projects across all branches of PPIP. IT team in PPIP is further divided into ERP and IT System Support function. ERP team consists of both core and auxiliary members whereas IT system support team has only auxiliary members. ERP team provides user support by solving day-to-day bugs related to ERP system and ensures that all the modules of ERP package functions smoothly. They also customize ERP System according to the business needs. Based on the size and scale of the project, they get additional support in terms of both financial and human resources from the head office.

Role of IT system support team is to ensure stable, profitable and secure operation of IT infrastructure. It aids in increasing efficiency and reducing business costs by various means and also conducts IT and security audits for the firm.

4. ORGANISATION CULTURE

Due to its small size, everyone in the organisation feels that they are part of a family. Every year, a tour is organised for all the managers in order to bring them together and nurture feeling of oneness. This helps in smooth execution of many critical orders as the coordination among cross functional teams is essential. Attrition ratio of PPIP is very low. PPIP never had any problems with unions.

But, there is less coordination between functional departments and ERP team. This can be partly attributed to the fact that ERP is not a part of PPIP and the team which supported their operations was dynamic. The employees were deployed as per the requirements of the projects and once the project was

¹This is a real case; however the name of company, industry as well as figures have been disguised to protect the identity of original company.

implemented they would leave for carrying out next project. Line managers interact with IT solutions team on transactional basis and no real synergy exists between them. In case of problem with the ERP system, users consult their peers first.

5. FLOW OF BUSINESS PROCESSES IN PPIP

Pristine Packaging follows global manufacturing standards. It adopts lean manufacturing² philosophy for increasing efficiency and smoothening business processes. It has divided its manufacturing process into three sub-divisions so that they can focus more on key processes which are critical to their operation and thereby extract more value from their supply-chain.

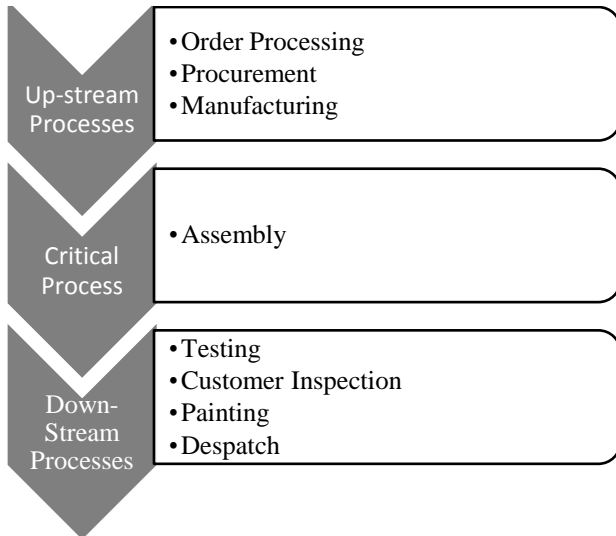


Fig.1. Flow of Business Processes in Pristine Packaging India Pvt. Ltd

Up-stream Processes: Order processing, procurement and manufacturing are classified as up-stream processes as they have to be executed before the assembly. These processes are designed in a way to support the load capacity of the assembly stage. Scheduling of these processes is dealt with utmost care so that they match the capacity availability requirements of assembly for that particular week or month.

Assembly Process: As per the lean manufacturing philosophy, assembly stage has been identified as the critical process/resource. The capacity of this process is setup in such a way that the upstream and downstream processes have sufficient resources to handle this load.

Down-Stream Processes: Post assembly processes like testing, customer inspection, painting and despatch are classified as down-stream processes. PPIP follows FIFO³ principle i.e., First order processed in assembly stage is despatched first, irrespective of order booking and delivery date. This is because delivery date of many orders might be amended due to several reasons like delay of key components, delay of payment by client. Sometimes, client requests the PM department to hold the manufacturing of products due to

design changes. It is desired that downstream processes should at least match the capacity of assembly.

6. ERP AT PPIP

In year 1996, Oracle package was implemented at PPIP as part of IT initiative taken by the Pristine Group. It included modules related to human resource, finance, material management and production. These were developed as per the business processes of the company and were efficient considering the small scale operations of the company at that point in time. Although, it was called as an ERP but all modules were developed stand-alone by Oracle and were not fully integrated.

At the end of year 2002, Pristine Group decided to replace all its Oracle-based ERP applications implemented across the globe with Microsoft Navision vers3.7. Pristine Packaging however, was quick to clarify that the company had no problems with Oracle applications. According to Director of company, the decision to integrate the ERP systems was taken at HO in Italy. A Gurgaon based IT company Excellence Software completed integration of the pay roll module with finance module. They were also exploring the possibility of integrating the HR module (it was on Oracle platform at the time of writing this case). PPIP had also assigned an annual maintenance contract to Excellence Software.

7. ERP IN PROJECT MANAGEMENT DEPARTMENT

In PPIP, Project Management department plays significant role in planning, order execution and customer relationship management. It is very vital because of two reasons. Firstly, it acts as an interface among various departments in order to execute a customer order. Secondly, it manages customer relations by coordinating with the customer for drawing approvals, product inspections, delivery date scheduling and despatch coordination. Various activities handled by PM department are given in Fig.2.

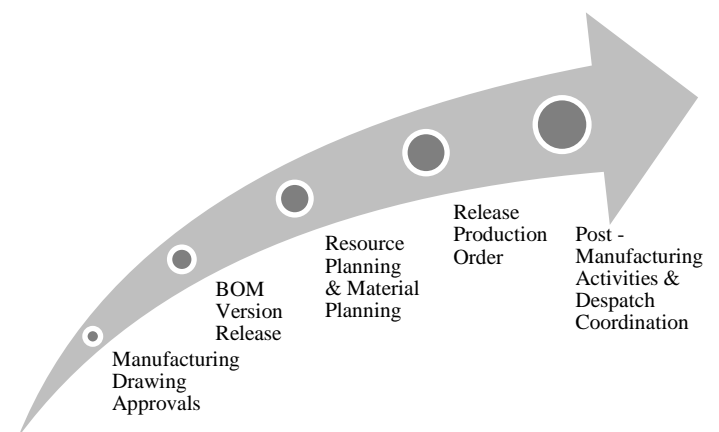


Fig.2. Roles & Responsibilities of Project Management Department

²Lean Manufacturing is an operational strategy oriented towards achieving the shortest possible cycle time by eliminating waste.

³FIFO is an acronym for **First In, First Out**, which is an abstraction related to ways of organizing and manipulation of data relative to time and prioritization.

Support offered by ERP system for all these activities is crucial. ERP facilitates at every phase of order execution as given below:

Order Booking: All the orders received from the customers are booked by the sales department using ERP system. Every order contains relevant information like customer details, product ordered, cost, delivery dates and the product requirements in the form of technical data specification document which is attached to the order using ERP system. Once the customer order is booked, it is transferred to project management department for further processing.

Approval Tracking: This activity is basically to track engineering drawings for the products ordered by customer. PM department coordinates with design team to get the drawings and submit to the client for approval. An order booking is complete only when the approval on documents like assembly plan, instrument data sheet and terminal plan is received from the client.

Resource Planning: This planning system is a critical functionality provided by ERP system which helps to balance the load on the assembly line and assigns each order a particular scheduled assembly week (SAW)⁴. During planning, ERP system takes customer delivery date, capacity of the plant and present load of the assembly line into consideration.

Material Resource Planning (MRP): Once an order is assigned a particular assembly week, it is released for production. MRP is hence critical for starting the production in-time. Also, in the case of materials which are directly bought out, the order is planned and placed in such a way that they are available on planned assembly week taking into consideration factors like the vendors' track record, material lead times and transportation. MRP functionality is the basis for inventory control. ERP System helps the Purchase department to raise a Purchase Order (PO) and track the status of material receipt.

Despatch Support: Once the product is ready and customer inspection has been satisfactory, despatch procedure starts. ERP software provides the visibility of the data regarding the necessary despatch documents and their status.

7.1 EFFECTIVENESS OF ERP SYSTEM

Since year 2002, the firm had been using Microsoft's ERP system - Navision version 3.7. While Microsoft had released 11 versions since then with advanced functionalities like customizable interface, flexible report generation, flexibility in transferring data to various applications including Microsoft Office and Outlook; PPIP continued with version 3.7. As the scale of operations grew with a sales growth of over 100% year-on-year, the effectiveness level of the ERP system dropped considerably. Functional departments were also unhappy with the declining performance of existing ERP. At the same time, globally many ERP rollouts were happening and ERP systems were being upgraded to SAP.

The decision to upgrade or implement a new system is taken by the management of individual businesses in PPIP but has to

follow an approval from the top management at Pristine Packaging, Italy. ERP System was able to provide basic functionalities but not all business needs were fulfilled. Each department had stuck always to their traditional way of doing things and substituted ERP with Microsoft Office. Reports were generated using Ms-Excel or Ms-Word by taking some part of the data from ERP system. Much of company data and reports were stored on a physical drive rather than on the ERP system database. Order processing was not fully automated and involved traditional ways of ordering through mails and paper work.

Neither PPIP management made an attempt on its own to find out the gaps in existing ERP software nor their attention was drawn towards the same. But, towards the end of 2011, ERP support team reported management that Microsoft had stopped providing support for Navision ver3.7 in terms of patches/updates or resolution of bugs, which left top management in a dilemma. They had to decide between up-gradation of ERP system to newer version or implement another ERP system. As far as the second option was considered, they were keen about SAP because many bigger businesses in Pristine group were already using SAP globally. They invited opinions from all the departments and held long discussions in order to decide the ERP System. Most of them were of the opinion that Navision wasn't fully effective and were in favour of implementing SAP. Management had discussions with experts from Pristine IT Solutions to compare the two ERP systems.

Finally, Italian management decided to up-graduate ERP instead of implementing SAP. They held an opinion that implementing SAP would require re-mapping all the ERP modules. They were also uncertain about the effectiveness of SAP and its compatibility with the business processes of the PPIP. Nonetheless, neither PPIP management nor the ERP team took any initiative to map the business processes before this up-gradation. They simply believed that the new ERP system - Microsoft Dynamics 2009 would be a solution to their business needs.

7.2 ERP UP-GRADATION

Pristine IT Solutions took up this project of up-gradation with its team based at PPIP. The team had planned to complete this project in two months. Firstly, they developed a prototype of the new system and updated old database with real-time, company specific data and modules. Then, they conducted training sessions for all the employees using new ERP system in two stages. First, they provided general information about the new ERP system and the need for migration. Second training session was scheduled department wise where specific training was given for job respective modules. After training, testing was conducted by giving every employee a window of five days raise any issues faced. There were few issues like data errors, reporting errors and functionality issues which arose in this phase and ERP team could sort out all of them. The older version of ERP system was moved to an alternate server and the up-graded ERP system was made live. Management was very happy with the project as they had successfully completed it within stipulated cost and time deadlines. Approximately 40 Lakhs was spent in upgrade and licenses for its 40 users.

⁴SAW: A month is divided into 3 SAW's each consisting of 10 days. If there are extra days in a month then they are counted in next SAW. SAW is an internal terminology used for the ease of planning.

7.3 MEASURING EFFECTIVENESS OF NEW ERP SYSTEM

After few months of upgrade, Project Management department undertook an initiative of measuring the effectiveness of new ERP system. This required defining few objective performance criteria. These were broadly classified under four major attributes.

- Decision Support Capabilities
- Planning and Control Capabilities
- Ease of Use and Flexibility
- Data Integration and Security

The measurement was conducted based on presence or absence of a particular parameter. This was done by conducting a focussed group interview in the project management department by the co-author. Full presence, partial presence and absence of a particular parameter resulted in 1, 0.5 and 0 score respectively. Once this performance criterion was formulated,

the old system as well as new system was measured in terms of their performance. After every attribute was measured, the final score of an ERP system was calculated by aggregating the individual score of all the parameters.

8. CONCLUSION

Analysis shown in Table.1 revealed that the new version of ERP system provided all the employees much more flexibility in carrying out their routine job with a customizable user friendly interface. However, majority of employees did not find much improvement in the core functionalities like planning and control systems and also the decision support functionalities. Therefore, when an employee feedback was collected regarding the new ERP System, they believed that new version has only 20% improvement in absolute terms over the previous system. Pre-implementation employee survey rated the older system as 40% effective.

Table.1. Effectiveness of ERP System

Attribute Measured	Parameters	Navision 3.7	Dynamics 2009	Improvement
Decision Support	Dashboards	Absent	Absent	25%
	Report Generation Support	Partially Effective	Present	
Planning &Control	Planning Systems	Absent	Absent	0%
	Control Systems	Absent	Absent	
Ease of Use & Flexibility	Color Coding Schemes	Absent	Absent	50%
	User Friendly Customizable Interface	Absent	Present	
	Flexibility	Partially Effective	Present	
Data Integration	Single version of data	Present	Present	-
	Real time and Accurate information	Present	Present	
	Data Security	Present	Present	
Total Supportiveness		4/10 = 40%	6/10 = 60%	20%