Enterprise Resource Planning is eEverything in Business: A Case Study of Manufacturing

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Abstract

A common database and a modular system implementation allow every department of the company business such as finance, production line accounting, human resources, quality assurance and logistic to store and retrieve information in real time. All information from these departments is reliable, accessible and easily shared. A modular software with standard format is designed to support the data storage. The appointed data from the system can be assimilated to use as a tool for company business. Hence, it can be easily retrieved for used at any desired time. The information can be viewed in various format patterns to serve the meaning for individual department that analyze for their own demand. A sharing system constructed to serve all departments within a company’s goal, a conceal activities for all employees to cooperate and clear target goal achievement.

Enterprise Resource Planning (ERP), Smart System, Work Flow, NOK Precision Component Thailand.

Keywords: Enterprise resource planning (ERP) is an enterprise-wide information system designed to coordinate all the resources, information, and activities needed to complete business processes such as order fulfillment or billing [1]. The first implementation of ERP is originally derived from Manufacturing Resource Planning. The system is used for manufacturing data storage to support the engineering, bill of material, capacity work flow, process control and it flow then the expanding to how to plan capacity of production is raised to the management for their managerial theme. How can we obtained the building plan in a precise schedule time is very important for a large-scale business. The efficiency planning is effect to the company’s wealth, the cost saving, lowest cost is the aim for all business.

We implement the functional of software package as defined in a principle and also the system is designed to be several subsystems decomposition to meet the concept. An example scenario of one subsystem in company, the integral section in payroll subsystem such as labor cost, salary, overtime the addition of compensation is automatically calculated then store to use as a data for the concern department such as accounting, finance and human resources. The data is stored in a center for further analysis purpose solution is to aid the achieved goal throughout the business chain.

System Implementation; ERP software is an integral of various applications and typically complex in a wide range scope of application within a business. There are many factors need to be considered during the implementation which are concern the staff work practices, size of business, time, cost and the willingness of the customer to take their ownership for the project. There are three areas of professional services: consulting, customization, and support. The
coherent teamwork requires participation and cooperation work closely together. Consider to the first stage of how to manipulate the availability data from existing system, the service to data migration is important activity because all analysis is required the primary data which is imported from legacy system, it is vital of ERP success. After the data migrated, systems around standard business processes, based upon best business practices are considered for the ERP implementation.

ERP implementation is considerably more difficult (and politically charged) in organizations structured into nearly independent business units, each responsible for their own profit and loss, because they will each have different processes, business rules, data semantics, authorization hierarchies and decision centers [2]. The standard process business needs to be defined as a rigid consequent direction. Process analysis has been needed to be done before of setting consequence process throughout the organization. The analysis should map out to all presented operational process, existing system selection of an ERP with standard modules that aligned with the established organization. Example, online delivery is a part of analysis business process for customer service department, the sooner the customer order, the faster the customer service can retrieve the information to check whether the finished goods are in house to serve the customer or not.

Technology Infrastructure Requirement.

The technologies and procedures are required to ensure that the systems are reliable and secure for information’s privacy, authenticated to the right person. The technologies information needed to operate in a confined of a set component of Hardware, software database and network. The integrated components and a policy conceals with proper tools to allow each parts perform function well [figure1,2]. The relationship between employees, customers and suppliers to work in a coherent by using computing platforms is required to be established at the beginning.

Figure 1: IT Infrastructure Provides the Foundation for Serving Business Solution
The telecommunication needs level of quality of service such as data, voice video and multimedia that provided by telecommunication agreement. Data management services required a storage in safety condition and capable for analytical which included the computing and Internet infrastructure. The suitability infrastructure setting should be in a standard structure from agreement among manufacturers and widespread consumer acceptance. A standard technology is a specification that establish the compatibility of products and the ability to communicate in a network groups and standard components [3].

Another view, which is very important, is how to improve the organization is necessitate in knowledge continuous improvement, change management empower employees. We can say in another word that all employees’ participant is an atomic power to drive the successful to the business. However, the management’s strategy and cohesion of technology deployment must be coincided to support the implementation of ERP. Win-win process is one kind of strategy to persuade the employee to openmind, make a good attitude, good response, sharing the update information to all members in a work group to. The competition is an underpin that force the business direction to increase the customer and social expectation. The sustain the growth of business and maximize the profit is the way that should be supported by the team to reduce the cost improve quality by using flexibility of tools and also those equipments should be adaptability for multi-purpose.

What are factors of the manufacturing competitiveness? There are a lot of factors influence to the competitiveness of business and manufacturing, such as flexibility innovation, advance technology of competitors, new trade agreement and shorter life cycle of the product.

To organize the business, it is necessary to drive the business challenges. The global infrastructure ecosystem is the platform to drive the business challenges. The ecosystem is the platform to drive the business challenges.
information should be managed in an optimized usefulness.

ERP is everything in Manufacturing: A Case Study of NOK precision Component (Thailand) Ltd.

NOK is Japanese company located in Bangpain Industrial Estate, Ayutthaya province, Thailand. NOK have been produced high technology piece parts for various products of hard disk drives components such as crash stop, latch, ramp, top cover of gasket and also vehicular parts [figure3]. To manage a simultaneous product is a complex task. We try to find a mechanism to assist our business decision. It is de facto that the products from the high technology assembly line are not simply produced. We apply the concept of ERP to our business. NOK has his own information management system namely Smart System[figure4].

Smart system is a combination of smart operation and information technology and consists of five key information management factors, select, simplicity, share, show and search. Select means that the information must be stored and important features are selected. Simplicity, ease in design pattern to access for usage. Share, all information can be reused and available to all departments to access. Show, information can be retrieved at any time. Search, ease for searching in a certain response time. All these key factors constrain information of relevant, reliable, update competence, accurate and timely. Relevance means that information must precise and correspond to the nature of it physical characteristic. Reliable, the information can be trusted and can be used for any analytical interpretation. Competence, information must not lack or missing any important features for presentation and also it must be up to date.

Figure 3: Hard Disk Drive Components from NOK
Accuracy, information of its own sources must not be altered to the outside boundary areas.

Smart system implementation, the system must be constituted on well know hardware, software, operating system infrastructure in such a development tools, development languages and database. Smart system is an immersing of tools and techniques; smart operation, enhance performance and information technology. There is work in cooperation from all departments in company, production department, finance, engineering, accounting, human resources, quality assurance, and operation management.

At human resource department, we have Human Resource Management Subsystem, HRMS that track the personal movement, attendance and leave, payroll, and training. These sections have implemented their own subsystem. Example of recruitment subsystem allows any interested person who wants to apply the job to submit the application form via Internet. This is a policy that NOK can promote the government’s policy to encourage new generation teenage to familiar with eBusiness. NOK will accept the applicant from reviewing these applications then the interviewing process will be followed and also the information of the interviewing will be recorded in the system as well. We can track the historical of any employees at anytime. Even the vacant position and encourage internal promotion, the internal employees also must apply the new position in the same manner. This system is linked to employee database. We can track employee’s performance so that annual appraisal is easily evaluated.

Figure 4: NOK Enterprise Resource Planning Implementation Model
Manufacturing workflow defined in the figure 5. It illustrates flow of each particular work product. Once the marketing received the ordered from customer, he/she will enter sales order to the system and the planner will plan the capacity built to the production line and also distribute the report to the purchasing section to buy the raw material.

In a simultaneous workflow, the planner will open the work order to production line. At production line, the subsystem of process has be stated from incoming inspect material, assembly, sampling for the quality acceptance level, throughout the packaging and transfer to store. This workflow need to be cooperated with the stocking procedure, warehousing. We implement wireless barcode reader and process flow to more efficiently working at warehouse. The management can monitor the work in process at any station at real time.

In a managerial meeting room is very tiresome work for a large organization. eScheduling system has been used in an online appointment and meeting room reservation. An online reservation monitor displayed in front of meeting room in real time. Staffs can know the real vacancy status and in using status of each meeting room. No privileged classes for any staffs to discard the prior reservation in our organization. The meeting room is first come first serve.

To educate the staffs in learning society, we established eLibrary to store online information, book and other media as a virtual library. The system is standing for functional in easy to access and easy in searching. We try to gather various branches of knowledge such as management, engineering, technology, biotechnology. This policy influences to enhance staff’s ability and in a final outcome to obtain a high efficient human resource in company.

eDocument’s implementation is a strategy that can reduce a huge of paper consumption. The revolution of the system, first is keep a collection of all documents then make a soft files by scanning after that writing the
software to store in particular categories. Training is one task that encourages our staff in learning experiences assist the performance improvement. Training system both online schedule and multimedia of crisis course is provided for all staffs to learn.

Conclusion

Enterprise Resource Planning beneficial to organization in tremendous aspects such as in the view of assist the business goal in a status as launch to be a manufacturing competitiveness in the world-class manufacturing. We can track status in a realm of Global Competition, increasing customer and social expectation, reduce total cost and time, avoid shrinking margins hence, we can maximize the profits and finally we can reach to the point of sustainable growth.

Reference