# A Study on Implementation of Material Management System Using Web

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*Abstract:* - Today, the modern society is changing rapidly to a knowledge information society through the spread of the Internet. Unlike the mass production era, consumers' desire and taste are formed quite variously. The rate of production and rate of sales of products that several corporations produce differ according to time and season. Corporations manage a BOM (Bill of Material) to keep track of production of product costs and optimal stock amounts. However, this causes several problems by not reflecting the requirements of a modern society which changes diversely. This paper wishes to complete an automatic order system from the raw material supply company to the sales company.

## **1** Introduction

For a corporation to provide low prices and high quality products, they need to construct a new material control system reflect individual needs of customers. Standardization of parts and processes help produce more products faster can lead to achieving lower costs [1]. But, in times when customers' requirements change rapidly, the existing materials control system can not make products that are sold in the market. Customer requests must be satisfied by various parts and processes. To realize these production/marketing methods a new product development process and system must be considered.

In the product planning process there must be an investigation about individual customer requests rather than an entire consumer's attitude survey. Such examined specifications are separated into common specifications and individual specifications. Commonness specifications must reduce number of parts that consists the whole product through standardization. Also, standardization can stabilize quality at an early stage by using verified parts, and reduce Lead Time by decreasing trial and error. On the other hand, individual specifications offer an appealing quality to customers as a marketing point of the product and make the product sell. Also, by clarifying the individual needs of specialized markets lower prices can be achieved through exclusion of unnecessary specifications [4].

On the systems perspective, it is necessary to change to a system that can reflect customer's requests rapidly. Customer's request specifications are not the parts but functionality and administrative information to satisfy the customer, which was the role of existing systems, must be available at early stages of product development. BOM in materials control system is not important simply for linking design and production, but must be developed to a degree so that it can be utilized as the base of administrative decisions.

#### 2 Research

(1) EAI (Enterprise Application Integration)

In today's competitive and dynamic business environment, applications such as Supply Chain Management, Customer Relationship Management, Business Intelligence and Integrated Collaboration environments have become imperative for organizations that need to maintain their competitive advantage. Enterprise Application Integration (EAI) is the process of linking these applications and others in order to realize financial and operational competitive advantages.

One of the challenges facing modern organizations is giving all their workers complete, transparent and real-time access to information. Many of the legacy applications still in use today were developed using arcane and proprietary technologies, thus creating information silos across departmental lines within organizations. These systems did not enable seamless movement of information from one application to the other. EAI, as a discipline, aims to alleviate many of these problems, as well as create new paradigms for truly lean proactive organizations.

EAI intends to transcend the simple goal of linking applications, and attempts to enable new and innovative ways of leveraging organizational knowledge to create further competitive advantages for the enterprise.

When different systems can't share their data effectively, they create information bottlenecks that require human intervention in the form of decision making or data entry. With a properly deployed EAI architecture, organizations are able to focus most of their efforts on their value creating core competencies instead of focusing on workflow management.

#### (2) B2B(Business-to-business)

Business-to-business (B2B) stands for relations between enterprises, contrary to relations between enterprises and other groups (e.g. consumers, public administration). The term is today used in marketing however it was established to describe the electronic communication relations between enterprises in order to distinguish it from the communication between enterprises and consumers B2C.

While in former times one spoke primarily of industrial marketing or capital goods marketing, today the term B2B-Marketing is widely used. B2B-Marketing covers all products and services used by enterprises. B2B marketing is considered more complex than B2C marketing because on the buyer's side, there is often more than one person involved in a B2B sale, the buying center.



(figure 1) Integration of e-business

The matter (figure 1) which you must have Environment to be necessary for problem solution.

1) Complicated IT environment (a Platform, OS, DBMS, Application, cooperation method).

2) Cooperation between systems is necessary by e-Business systems construction promotion recently.

3) An outside business partner and close duties connection with a system are necessary.

4) Systematic unification of entire company resources is necessary.

#### (3) Why MRP and Web Service?

① Different approaches have emerged – data adapters, message brokering and other types of middleware, and other approaches. These different technologies have collectively become known as Enterprise Application Integration (EAI). EAI is the process whereby a company integrates their disparate legacy systems and databases, often with resent systems additions.

2 Web services provide an open means of dealing with integration, where EAI has traditionally been driven by one or two benders or is product-specific.

③ Also, where Web Services are meant from the get-go to be used in distributed fashion, that' s not always the case with EAI Technologies.

Because, I use WEB and can make easy Integration.

At the cost side, A franchising strategy to adopt Web Services for MRP implementation or enhancement takes advantage of the investment made in the legacy MRP applications and gives them a new lease of life.

	Past	Future
		<ul> <li>Annual</li> </ul>
		development
		model numerical
	Simple product	increase
	specifications	Derivation
Product	A part according	model numerical
Spec.	to a project /	increase
	module	Part / module
	development	common use
		between projects
		<ul> <li>High quality lov</li> </ul>
		discrimination
		characteristics

		Development	
		period contracted	
	Stabilization of a	pressure increase	
	product life period	by product life	
	Development	period shortening	
Value Chain Operation	and production	Concurrent work	
	duties order next	with a design	
	progress	• Global	
	The domestic	Operation	
	production center	accomplishment by	
	A price of the	offshore production	
	expense center	Cost price	
		setting by an aim	
		price	
		price <ul> <li>Market</li> </ul>	
	• Market	<ul><li>price</li><li>Market</li><li>Leadership of a</li></ul>	
	• Market Leadership	price <ul> <li>Market</li> <li>Leadership of a</li> <li>customer</li> </ul>	
	Market Leadership subordination of a	<ul> <li>price</li> <li>Market</li> <li>Leadership of a</li> <li>customer</li> <li>Necessity</li> </ul>	
	Market Leadership subordination of a producer	price <ul> <li>Market</li> <li>Leadership of a</li> <li>customer</li> <li>Necessity</li> <li>increase for</li> </ul>	
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 The past and the future of a material system of administration

#### 3 Limit of Material Management System

Product life is the situation that I shorten and, product kinds are various and must constitute by customers needing various items and designs very in the modern society to be different from a past. The time that must consider foreign production and circulation, warehouse management various situation by the production system domestically came.

An anti-much supplement measure is necessary so that a design process consists of various problems to make ends meet on a system freely.

There are a lot of examples now a figure invests more time and expense in a process, procedure, document than the last production thing in the situation that must deal with such a various changes in companies, and I do positive, and innovation administers the enormous system which does not hit company character in the time when it is necessary, and to fail in technology to a, IT base.

Therefore I offer the approach characteristics that, is this article and constitutes the automatic ordering system which is core part with a Web base in spite of being basics mark most, and can easily approach anyone.

I decide to treat the purchasing and contents for material management by this article for the system which approached very heavily in a small medium and small-sized business.

It is the part which improves in the customer demand accommodation to be various by, primarily outside correspondence system construction and a competitive power I predict it and build the system which I can get over which is time and the obstacle pivot of space, and to know by cost price reduction though you must make it in consideration of three kinds of matters to build such a system.

It strengthens a customer intention process, and mutual understanding between, systems must consist of the system which I can administer by the system in master ability at the side to strengthen inside ability with the second smoothly.

It is important. that build the system which the matter which you must consider at the end offers convenience characteristics of a user and must find, analysis and various views of a present situation document, and can deal by duties change flexibly

# 4 Computer Assisted Ordering

An ordering process (figure 2) in a company becomes generate in a procedure.



(figure 2) A material purchasing flow chart

It is a flow of general duties that I request you for materials and parts to need at a purchasing part-time job and send ordering, and send to the accounting in QC in QC by the, purchasing.

I formed a material system of administration with a Web base like such a general flow (figure 3) and was settled.



(figure 3) automatic ordering system flow chart



(figure 4) automatic ordering system

It is the constitution island where it is it to a factor constituting the high rank part which the basic part moves when I considered a basic part unit in Node, and I am high-ranking, and is formed.

The automatic ordering system which I was going to incarnate by this article incarnated BOM(Bill of Materials) on Web Site, and companies equal to a BOM of, each-related part participated with a member and get possible to grasp the present situation of a product in the purchasing region through , QC post, accounting department station.

A system is built with a standard in, Web by I link Web site in a BOM module like here, and incarnating BOM on Web freely and includes delivery of goods business company of 100, and gets possible to share a style the same in purchasing , QC, accounting department station and equal data.

Donomatan	Traditional	Web Service	
Farameter	Solution	Solution	
Scalability	Low	Very High	
Time Frame for	Very High	Moderate	
implementation	very mgn	Wilderate	
Maintainability	Low	Very High	
Reliability	Moderate	High	
Portability	Low	Very High	
Cost to Enter	High	Moderate	
Cost to Maintain	High	Low	
Total Cost of	High	Low	
Ownership	mgn	LOW	
ROI	Moderate	Very High	

 Traditional and Web service Solution comparison

And I can bring which pushes forward productivity of duties by preventing the repetition input of data every each, post.

OEM Work Company can revise a purchasing plan every stage to be able to deal for higher work company plan change fluidly.

Now, as for the quantity of plan of a suggestion system, an automatic ordering system keeping BOM by a purchasing plan is possible.

Therefore, I have the good point that can regulate quantity of ordering on Internet even if it occurs to compete for emergency.

I understand the system which I incarnate BOM on Web like this article to date and share in a few thing.



(figure 5) A material system With Web Service

# **5** Conclusion

I incarnate a next generation material system of administration by an article of a book and part development problems with a part client by various product development are about lack of material supply and demand problem, to occur at the time of issue of reasonable goods in hand calculation, production that an existing system had and consider big profit it to be able to be held for cost price reduction and a part and reconsideration supply for product production at the various sides than an existing system by offering Web base BOM.

Use was convenient and it was very concise and easily constituted a system than the various MRP, ERP systems and enormous systems whom I improved the duties that it had been repeated in efficiency, and existing, it was sold,, and consisted of because a style standardized it every post.

Correct reporting was guaranteed with expense reduction by doing several stock even if I did it and did not come and go by a, automatic ordering system each other so much.

In addition, results investigation for a, client came to make ends meet while managing a client for a part through a Web base and gave a difference by, trust evaluation and gets possible to enjoy cost price reduction.

However, a weak point came to appear on preservation when I tried to constitute an ordering system with a, Web base.

You must treat contents for BOM preservation management in a future trend toward growth.

In addition, I incarnate the system which I do, RFID system and grafted tree [3] and form it with a BOM base from production of parts to management, and can produce products of various forms.

I am big, and the BOM system which used the RFID tip which uses a cord for a future EPC base will be utilized on expansibility and preservation side.

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