

Supply chain management and warehouse supply chain information technology essay

[Technology](#), [Information Technology](#)



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\n[/[toc](#)]\n \nNowadays, warehouse storage no longer has to be a part of company but as another form of service sector. Warehouse storage that is provided by one company allowed storage and product management for the companies that use the storage. This not only cost saving but also easy the management as delivery is also provided by the warehouse storage company. Thus, our company provides such service to all. We have multiple storage location for all over Asia market such as China, India, Malaysia, Singapore, Vietnam and others. We provide not only storage for your company but also helps to import and export products from one country to others by moving your products across border to ease delivery. Beside those, enabling low cost for storage as our customer does not required to rent out a warehouse entirely and has to set up their own management for it as we provide the management together with the storage space.

Problems Encounter

Big companies like LG, Samsung, and Sony are producing massive quantity of home appliances products daily, items such as television, printer, air

conditioner and washing machines, when items are increasing before sending it out to the retailer; they need a place to keep it. Nevertheless, bigger items such as cars, motorcycles, bicycle needs vast warehouse to store it, does not matter even it is outdoor or indoor ; land space is getting more expensive and human labor will also be a huge cost to manage such vast area. Small manufacturers will soon face problem where they hardly afford warehouses and therefore supply will not be efficient to fulfill the demand of users, making them to face the barrier of improving their productivity and efficiency in the future as most of their limited fund are channeled to inventories keeping. Have manufacturers' inventory department face stock loss or faulty subjects? How good can the managers' track down that who or what is the cause of it? How honest can the employees be if they are greed? Who is able to keep track the correct material flow in the inventories? Carrying inventories here and there will be a cost to the company, having the possibility of dropping fragile items such as television is one of the concern by the supervisors and managers, and time is one of the essential factor that helps contributes to their productivity. If in this case, why should they spend time on doing that manually? With a reasonable cost charged, they will be free from those problem stated above, and let the professional do the job. Being able to spot problems for other as early as possible creates business opportunity for the founder. Good things comes to those who wait, good things comes to those who thinks as well! We are your solution! With your company condition and capability, we are recommending a tremendous improvement and innovation as a big supplier. Instead of having a 5, 000 square feet single storey warehouse, with our new

supply management system, you are now capable to have up to 5 times of equivalent land area of warehouse and have the entire efficient yet cost saving program. While workers still climbing up and down with lifts and ladders, machine can now take over the role of doing that, nevertheless, it can be designed to reach a certain height even labor uses a ladder. Having the dream of owning one import car and is able to drive it on the following day is no longer a dream. First of all, everything comes with a barcode tracking system. Labor no longer need to spend time searching for items they need that stored in the warehouse, subjects will have their own Identification Code, also known as IC, labeled at the side and also the space provided. Machinery arms, automated trolley will now have to match make the two related item - to ship the subject to its designated spot and extract out the items needed and send it to the packing department when they receive an order. It is all possible with just a button click and perhaps a team of engineer to be ready for it. With our modernize supply system, manufactures no longer need to spend on inventories, resulting them to channel the revenues to invest with larger machinery to enhance their quality and quantity of specialized products. Human are not designed to be abused, machinery are. Companies that use your facility will no longer be concern with their high cost expenses; in fact, your company can afford to work 24 hours every week. Retailers does not need to worry running out of stock anymore, with just a click away, they can communicate with the manufacturer and supplier to provide them with information on stock availability, and on the following day before they start operating, the requested goods will be already by their door side. With a warehouse fully

automated by itself, they are no longer dependent to human labor, except a team of professional engineers. Everything will be systemized by its own. With applying new technologies into this concept, both parties (the manufacturer and the supplier) can maximize the profit with just a little effort, at the same time allowing retailer stock to be always fully prepared behind their storeroom. Besides, this automated warehouse would not be complaining if they work for long hours, especially when they are a big season coming up. Supplies will not be affected easily and manufacturers are able to meet their customers' demand and satisfaction. We are also open to all sort of items storage. Not only end user product can be stored in this warehouse, raw materials for manufacturing purposes can be also be shipped to the warehouse and to distribute to manufacturer when they are running out of stock. This allows the warehouse facility not only to be targeted by only a portion of user, but everyone of them. When there is a demand, there will be a supply. But when the supply overflows the market, it all can come back to the warehouse. And the system will communicate with the manufacturer, to report the number of stock to be produce in the following time frame. This will also expand many opportunities to retailer, with the combination of making products available online, they save cost from a lot of unnecessary shipments. Retailer can start ordering directly from manufacturer and collect items from the warehouse, providing end user a friendly price that they can afford easily. How will you know when your clients' inventories product is going to expire soon? What if the products all have a different expire date? Which technique should they apply? FIFO LIFO? Now with the tracking system, computer can easily put up a notice where the

product is going to expire soon, and channel it to First in First out method. Or even if the product is not selling well in a location (by tracking down the average period of ordering with the product), the system are able to channel it to another branch where it is a lot easier to get sold there. This is where our multiple location warehouse capability comes in play. We also believe that cost is the factor for a company to use the facility. In a warehouse outsourcing service, there are a few types of price structure. First is revenue sharing, where profits are shared accordingly with the manufacturer. In brief, revenue sharing will be a distribution of a portion of revenue between the two alliance companies. However, warehouse system cannot afford to suffer losses with the manufacturer if the manufacturer is not generating healthy revenue. Secondly, it is cost plus. Cost plus is a pricing method where companies maximize their rate of returns. The company will have to graph out the marginal revenue equals marginal cost to indicate the profit maximization, and then charge a price determined by the demand curve. However, there are a few disadvantages of using cost plus method in a warehouse facility company, this method of calculation will ignore the opportunity cost and tends to ignore the role of consumers and competitor, which means the pricing decisions, can be made at a relatively junior level in a business based on formulas. The final method and the method recommended to be used is the Activity Based Costing (ABC). Activity based costing manufactures overhead cost to products rather than simply allocating costs on the basis of machinery hours. It assigns cost to the activity then cost of those activities to the products that actually demands on the activity. With this method, warehouse's revenue will not depend on

how good the turnover of the product is, but to maximize the profit of doing so. This method is being more popular recently is because manufacturing overhead cost had increased significantly, the overhead cost no longer having mutual relationship with the productive machine hours or direct labor hours and also the diversity of products for customer demands have grown. With this, we believe it is the best business practice to have long term business relationship with the clients and to have a sustainable growth strategy.

Warehouse System

As for all of our warehouses, we have implemented the following system. There are several sections that can be categorized in the system for warehouse: stock and distribution automation, transport control, yard management, inventory management, resource management, cockpit, and billing. The first section is stock and distribution automation. Under stock and distribution automation, after the manufacturers produced their products and delivered to the warehouse for storage, the supervisor will receive these packages and key in the data directly into the system. At the same time, quantity of the packages will also be recorded. In this category, we will use free-size and large or heavy Automated Storage and Retrieval System (AS/AR) to store the packages without using handling units, human resource. In this case, it can increase the efficiency of placing goods in storage, retrieving and relocating them as the software will automatically know which and where is the storage for the items. Besides that, racking system in this part also help in stacking and racking the storage. Transportation system

under stock and distribution automation is authorized to transport the packages into each of the rack that are prepared to store the items. This process will include the usage of an Automatic Storage and Retrieval System (AS/AR) and automated transportation and sorting vehicles, and an automated overhead traveling vehicle. Partnership with Murata Machinery Ltd (Muratec) provides the technologies of automated storage and retrieval system (AS/AR). As for the picking system, it will include layer picking system, vision sensor robots, and digital picking systems. Layer picking system is the use of a combination of vacuum and clamping technology that has the capability of picking multiple layers of storage at once as well as picking and placing entire pallet loads, allowing for simple and secure inventory replenishment, especially with unstable loads. (Packing World, 2013). Vision sensor robots will be used to in picking system to make sure that the storage is clean in a way that there would be no damages on the package itself. These robots are also functioned to check the bar code on the stock so that when there is an order on which ever item, the robots can automatically locate the items or packages and ready them in anytime. We will use digital picking system to pick or take out the items from a stored location to fulfill an order for delivery. Sorting system under stock and distribution automation is the used of steel belt conveyor and tilt tray sorter. Steel belt conveyor is a combination of horizontal and elevating movements that allows the packages on the track to be sorted and the track will lead to tilt tray sorter. Tilt tray sorter is excellent for fast sorting of a wide variety of items, such as CD's, DVD's and small packages. (GBI Data & Sorting System, 2002-2009) This sorter will sort out the items regarding the item's size,

weight, shape, and packaging and it will automatically and reliably sort the packages and bar coded items to the designated drops. Partnership with Interroll Corporation provides the technologies of steel belt conveyor. The second section for the software for warehouse is the transport control which will include general cargo transportation, refrigerated truck deliveries, and Hitachi Transport System. We will design and implement the general cargo so that it has the most suitable pattern and routes for transporting and the general cargo is shipped using rail and auto transport, sea and river vessels. We will provide refrigerated truck deliveries services which can transport refrigerated or frozen foods as well as temperature sensitive cargo without having to concern about the weather conditions. There is also Hitachi Transport System (Asia) Pte Ltd which was established in Singapore. This transport system provides services to accommodate the growing production or distribution activities especially in Asian nations such as Malaysia, Thailand, and Vietnam. (WCA Family of Logistic Network, 2011) We will also provide application software for these transportations to register which company orders the packages, location for the packages to be transported, the amount of the packages, and the date that the packages needed to be transported. This application will process the first in first out way, destination of the packages transported will follow the track from more than a point A to point B so that there would not have insufficient freight to ship a full truckload or that the packages reach the destination will have any expire date or mistaken items. We will also incorporated the Global Positioning System with the partnership of Google Map and also application Waze for the transportation for the delivery service with Hitachi Transport System (Asia)

Pte Ltd and also to DHL. These map plotting system to allow distributor or manufacturer to track their items and at the same time allow delivery team to plot the shortest path to save on resources. It allows the transportation to be done at the most beneficiary routes and also able to reroute quickly. This system will allow customer to receive an estimate time of delivery and update on changes if there is any traffic congestion occurs. The third section is the yard management which provides real-time asset management capabilities for tracking down the location of goods. (Manhattan Association, 2009) Under yard management, it is specifically design for the storage of vehicles such as Toyota. In this management, it will records and manages the time freight vehicles ready for loading and unloading and assigns these to specific loading bays. If the specific loading bay is unavailable, the vehicles will then sent to a parking bay that is prepared to solve this insufficient places problem. Here, we will set a large display screen in the outside area of the site or an SMS informing the driver that the bay is opening up for more available vehicles that needed to be stored. This system reduces the resources needed for coordination in the outer area of the warehouse. The fourth section for the software of warehouse is the inventory management. Under inventory management, it include real-time inventory visibility, inventory cost management, strong inventory control capabilities, and barcode technology. Real-time inventory visibility records all warehouse operations and goods movements. This system keeps the exact data about the goods serial number and period of expiration. Inventory cost management control the rental, salaries, overhead cost, maintenance, and facilities cost. In this system, it helps the warehouse to be aware of the cost

that was needed and to reduce the overused of the cost. Strong inventory control capabilities are used to re-order necessary inventory items quickly and easily. When there is an insufficient inventory items in the warehouse, this system will alert or track down the staffs through smart phones to inform them to order the necessary items. Barcode technologies include barcode label, barcode scanner and barcode printer. Barcode label will be used to label a full range of stock labels and the barcode will be scanned. This barcode scanner will then provide the details of each item and automatically key in to the system. The fifth section is the resource management.

Resource management is to make sure that the right resources are working correctly in the warehouse and Deal with the problem how resources can be optimally used, taking into account various constraints which includes allocating resources, streamlining resource requests and advanced skills tracking. Resource allocation is the distribution of resources - usually financial - among competing groups of people or programs. (Cost Effectiveness and Resource Allocation, 2013). Streamlining resource requests are allowed to adjust and delete resources on bookings based on resource utilization and staffing needs. Advanced skills tracking provides clear view and search all active and inactive resources in the warehouse. The sixth section for the software of warehouse is called cockpit. Under cockpit, it will consists of a number of dialogue screens for displaying situations, statuses and cycles in warehouses, distribution centers and logistic center. Cockpit provide operating staff with a clear overview of how the warehouse is operating as not much staff know how the warehouse actually operating. These enable quick decision on any management to action if there is a

necessarily without any long delays of inspection. Thus, it provide a quick response and able to inform our customer regarding it if it actually affect them in a way. The last section for this software is billing management. Billing management is a warehouse billing software that automates labor-intensive process. This system is design to records and analyzes the warehouse associated costs such as packing, picking, sorting, transporting and many more. This cost-analysis feature will provide an evaluation and comparison of the actual costs and opportunity costs of service by supplier, retailer or distributors. The billing software includes transactional and storage billing engines that can be automated by the system itself or manually by the staffs that are responsible for the billing task. Besides that, the system will also provide invoice generation and printing which helps the warehouse to generate the invoices automatically or manually as well as printing draft invoices and other transaction invoices that are needed for the warehouse. These enable a minimize error invoices to be produce and it is able to be send out either in the form of softcopy or printed out as hardcopy for the supplier, retailer or distributor. Not only that, it is able to be process in a short time and provides a detailed invoice for our customer to know every details of what is being charge for.

Warehouse Software

In our software, we provide easy management of what we had provided in our system for our customer to manage and to know their products whereabouts, amounts, and notification when stock in certain locations are running low and stagnant stock for sitting idle for too long in a warehouse.

This enable our customer to make a decision to move their stock to another warehouse and restock others stock that is low in the current warehouse. Other than that, as mentioned in our system, tracking system that is in used not only provide access to our customer but also to a certain limit of access to our customer's customer in order to locate and able to know the estimation time of delivery. These ease both the retailers, manufacturers, and also consumers as that they are not bind to wait for the delivery over a long period of waiting time in between. Meanwhile, any delay of delivery will also be notify as quickly as possible to allow adjustment to be made if there is any event of unable to receive the delivery. This create an effective communication between parties and also to our delivery team. Compatibly of our software is also another important factor. In order to provide an effective tools to be use by all, our software is cater to almost all operating system, from iOS, Android, Blackberry OS and Windows, even Windows RT. Therefore, regardless of what platform and operating system that our customer used, there will be a compatible version for it. Not only that, compatibility of software is important, we also provide a simple and user friendly graphical user interface. This allow easy access and quick adaptation to it without any prolong training session in order for any of customer to adapt to it and able to run on it as soon as it start to run in your devices. Undeniably, such powerful tool may lose its function once the connectivity with the internet is loss. Therefore, our software also comes with offline mode whereby estimation of time, information of delivery and pick up, and any other form of last available information that can be track and recorded for the usage of our customer is also available but with limited information.

Users can also specifically highlight which information to be track in offline mode and thus able to have those necessity information instead of just limited regardless of connectivity with exceptional of latest tracking system location but only last known of location. Once, the users are able to access it online, it will immediately synchronize with our server and gain all updated information. While notification regarding of changes in delivery matter will have option to be ether notify via short message system or via the system software itself in order to fulfill both online and offline time of need. In order to sustain such capability of software to run, we have also ensure multiple servers in multiple country to host to avoid downtime and loss of information and high quality hardware. Without a proper hardware, no matter how powerful the software is, it will not run at its full potential; that is the reason why we host it in multiple servers. Assuming one of the servers is down, there is another server up to cater the service and synchronization will be done once the other servers is back online. This is to ensure the possibility of our service software to keep running 24 hours and cater it for all time zone.

Advantages

Before discussing the advantages of implementation of a warehouse management system, it is important to answer these three questions as this can helps a company to understand what is problem they occur and what this system do to help them solve their problem. Firstly, how much time did you spend to find and keeping track of your inventories? How often you make an error because of wrong information? And do you always have bad result of revenue throughout the year? Well, this is where the warehouse

management system takes ahead of today new technology. What does a well-designed warehouse management system do? It integrates computer systems, material handling equipment, storage equipment, and manages labor, organize working system. This at least it is benefits the companies in term of cost savings and in result of higher sales return. One of the most common advantages of using warehouse inventory software is the reduction of warehouse labor. In many cases, companies that install inventory software experience a significant reduction is the need for a temporary work force. Lacking of temporary worker can slow down the working process or might delay it and to hire a number of temporary workers can be very costing. Therefore, with the help of warehouse inventory software, excess labor is reduce by that it also reduces fees for worker training, reduces injuries happen to the worker and thus the company can use this to save cost in labor insurance fees as well. Improvements in labor utilization and the resulting workforce reductions often correlate to a reduction in material handling equipment. As a result, companies realize a reduction in annual maintenance expenditures as the equipment fleet is reduced. Future equipment needs may be reduced or eliminated as a result of workforce consolidation, shift elimination, and improved operational efficiencies. Thus, this help the company to save cost in both labor and equipment side. In term of management, the warehouse manager takes a great responsibility to ensure everything is keeping on track. The warehouse manager is the person who has overall of the inventory, he or she is the one who knows by heart where everything is kept and how much there is of it. The problem can be that the warehouse manager has trouble keeping control without working

himself to death. Others handling the inventory make mistakes or fail to keep proper track. The warehouse inventory software makes it easy for warehouse workers to track inventory, because activity is recorded automatically by scanning inventory is only a few key strokes away. The warehouse manager is typically also the person that has to deal with problems with shipment. If shipment are delayed or inaccurate, he or she is the one to get the complaint. Delay and inaccurate shipment are greatly reduced by implanting the warehouse management system. In enhancing in accuracy is an advantage expected by most companies that use efficient warehouse inventory software. It can eliminate warehouse and customer service errors using several methods. The one of the method is the 100 percent information verification. A warehouse receives, stores, picks, and ships goods. When a product is initially received, it is verified, bar-coded, and entered into the control system. All future movements are tracked against this barcode. The product has now been uniquely identified and the likelihood of tracking errors has been eliminated. On the other hand, the customer service errors can be eliminated through system-directed operation. Every receiving, put away, picking, and shipping operation is system-directed. A product will only move if it is system-directed, and the operator can only complete the move and go on to the next operation if the previous operation has been verified as correct. Operator errors associated with misplaced inventory and operator carelessness will be eliminated. Thus, it helps to minimize reliance on informal practices, resulting in reduced training costs for workers because most of it can be done through the software and it lower the error rates. Whether in dealing with vendors,

prospects, customers or employees it is important that the management to have or to improves in decision making skills. Thus, the real-time, accurate inventory and warehousing information enables every member of the organization to gain the knowledge they need to make better decision. Implementation of a warehouse management system can also eliminate the need for expanding of existing facilities or constructing new facilities. This because the software automatically helps to eliminates the need for the physical separation of inventory to avoid picking, shipping, or valuation errors. The material can be commingled in shared location without jeopardizing customer, lot, order, or allocation integrity. Furthermore, it can automatically consolidate like product by direction the new incoming material to be placed in the same storage location if the same product is in storage. Such put away rules can optimize the utilization of the available storage space in the warehouse. Thus, it improved inventory accuracy translates into greater storage utilization. Not only does an embedded warehouse management system offer benefits that increase productivity, but it also offers a lower initial cost during implementation. This option eliminates the need for expensive interfaces that have to be built or maintained and thus this decreases both of the company initial and long-term cost. In addition, warehouse management system also provides diversified all embracing reports for almost any plausible aspects of activities and substantiates the fact that working of warehouse is made 100% transparent. Each and every activity can be tracked, reported, monitored and consequently controlled. There reports are web based and are platform independent applications. Therefore reports are visible to any one who is

willing and authorized to see. This feature is especially beneficial for multi location warehouses and sales offices. That is not all, this features only function to be performed by Manager or Operators to use and it makes information readily available to only those who have permission to see it. Thus, it provides higher security which result Managers to be more comfort of the safety of their information. Besides that, implementation of a warehouse management system can help reduce paperwork generated from all the processes involved in the warehouse. With the advent of powerful technology available these days, reduced paperwork can help the environment greatly which resulting the company to practice environment friendly. All traditional paperwork can be converted to electronic data and can help a high level of timeliness and accuracy of all inventory and data. At the heart of all these, the greatest advantage that a good warehouse inventory software could provide is enhanced customer service to their satisfaction. First of all, how is this software help the company to win and retain client? Warehouse management system aids in providing a comprehensive database of customer and their preferences in terms of product demand. This information can be effective in developing customer relationship as it care for customer need. Likewise, warehouse management system provides multiple warehouses in all the different countries around the world, result in faster delivery time and space availability. In additional, many good and famous business partner like Automated Storage & Retrieval System (AS/RS), Conveyor & Sorter System, and Computer Hardware System in does helps to boost up the system time by time and also give the customer the guarantee and confident to implement our system. Along with

this it satisfied the customers, resulting in better sales opportunities and revenues. Overall, embedded warehouse management system solutions can provide you with the additional functionality you need to move your business forward, along with many great benefits that can save your company time and money.

Conclusion

In the nutshell, our company provides a warehouse supply chain service. These inclusive of storage, delivery, pick up and even management of your stocks to a certain degree. Beneficiary to you is through the money value, time and ease of access of information and the quick adaptability of our system and software for your company's employees. As so the progress of your company can run smoothly and without any stall for an implementation of our system. Not only that, your company also obtained an across borders advantages as of our warehouse can be found in multiple countries to helps you provide top speed and efficient services. It also reduce the matters with the customs of a country as of each delivery but only dealt with them once for each batch of stocks. Thus, cooperating with our company will bring forth benefits to your company and also looks forwards for increase in net income for both of our company.

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