How Your Inventory Requirements Impact Your Business System (ERP) Selection

Inventory is often the number one cost and consumer of cash for companies whether large or small, manufacturer or distributor, global or local. This makes the search business critical for the right ERP solution that can manage and control your inventory for both Operations and Finance. Read this white paper before researching new ERP.

By Clients First Business Solutions

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How Your Inventory Requirements Impact

Your Business System Selection

By: Michael J. Conti

Introduction

This whitepaper is intended to give the reader an understanding of the capabilities of inventory systems to help with the evaluation of an Enterprise Resource Planning (ERP) system. The fallacy is that all inventory systems are equal. Often, evaluations are driven by basic concepts such as ABC classifications or field name lengths. While these concerns might be important, the real challenge is the ability for the inventory system to maintain accuracy while operating under complexity along with allowing the business to adapt to future changes.

Planning for Today and Tomorrow's Growth

Today, when you view your business you may find your needs are not complex. You may have a single warehouse with a small assortment of products and you do not see this changing in the foreseeable future. Your focus is entirely on building what you currently have and are looking to better serve your current target customer. If this is the case, then a simple inventory system can adequately address. But what happens if your business grows or your needs change? The ideal is for the system to adapt to your changing needs without disrupting your business.

I have worked with many companies that have grown from smallest businesses to very impressive levels. In one case, our team implemented a 2-user system for company whose warehouse consisted of a couple of shelves. After approximately 10 years later, the company owned a large city block which consisted of a 60,000-sq. ft. warehouse and manufacturing facility. They leveraged the same system enabling more features over this period which allowed them to focus on their customers instead of chasing technology.

On the other hand, if you immediately know your business is complex and you have multiple warehouse, serial number requirements, batch id needs or you foresee your business changing to require these capabilities then a more sophisticated inventory system is required. The key focus is the ability of the system to accurately track inventory so customer service, production and warehouse operations can smoothly run to help justify the implementation cost and risk of a new ERP system.

There are many add-on inventory systems that are designed to fill the gaps of the core capabilities of the business system. These systems are attractive, in some instances for certain verticals necessary while in many other cases indicate that the business system lack the capabilities to support the business or user/implementer lacked the knowledge on how to activate the required feature.

Inventory systems within business systems vary widely and can be broadly classified as either simple or complex. Basic business systems are normally based on a simple inventory model which the focus is on quantity by warehouse. ERP systems inventory models are designed to address complex requirements and most often can be configured to address both basic and complex needs by setting parameters to enable what you need to use.
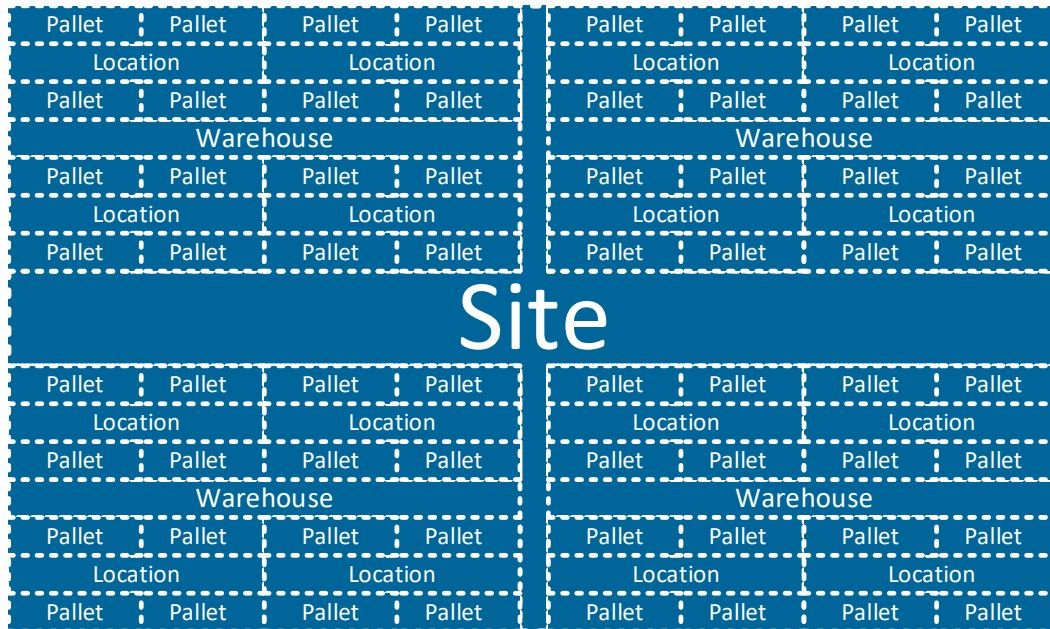
For example, if you want a simple configuration of the warehouse all you would have to do is enable the warehouse and location (site is automatically enabled) and enter the setups so your configuration would appear like this:

Site

Blank/Main Location

Main Warehouse

Staging Location   **Hold Location**

Blank/Main Location

QA Warehouse

Hold Location

BASIC WAREHOUSE CONFIGURATION

The as your business grows and you need to enable additional storage controls the can configure the use of Site, Warehouse, Locations and pallets as depicted in the following diagram:

Pallet	Pallet	Pallet	Pallet	Pallet	Pallet	Pallet	Pallet
Location		Location		Location		Location	
Pallet	Pallet	Pallet	Pallet	Pallet	Pallet	Pallet	Pallet
Warehouse				Warehouse			
Pallet	Pallet	Pallet	Pallet	Pallet	Pallet	Pallet	Pallet
Location		Location		Location		Location	
Pallet	Pallet	Pallet	Pallet	Pallet	Pallet	Pallet	Pallet

Site

Pallet	Pallet	Pallet	Pallet	Pallet	Pallet	Pallet	Pallet
Location		Location		Location		Location	
Pallet	Pallet	Pallet	Pallet	Pallet	Pallet	Pallet	Pallet
Warehouse				Warehouse			
Pallet	Pallet	Pallet	Pallet	Pallet	Pallet	Pallet	Pallet
Location		Location		Location		Location	
Pallet	Pallet	Pallet	Pallet	Pallet	Pallet	Pallet	Pallet

ADVANCED WAREHOUSE CONFIGURATION

As you can see, we have two completely different configurations resulting in providing distinctly different business value to each company and this can be done within a single system. We will refer to the use of Site/Warehouse/Location/Pallet as Advanced inventory storage control. The capability of segregating inventory based upon status is also available but will not be covered in this discussion.

The full storage controls are combined with inventory tracking controls. The tracking controls refer to the use of Batch Id's and Serial Numbers. To help keep this discussion manageable, we will focus on the Batch Id and refer to his as Full Inventory Tracking. The combination of the Full Storage Controls and Full Tracking Control will be Full Inventory Storage and Tracking Control.

Finally, the requirements of the business will drive which inventory model best addresses it's needs. A manufacturer or medical supply company would typically have more demanding requirements than parts distributor but this may not always be the case. What is important is matching the capabilities of the system to the needs of the business.

Simple Made Simple

Simple inventory systems are commonly used in small to mid-sized businesses (SMB) even when the business requires greater tracking. The accurate tracking inventory quantities is a significant milestone for most businesses which requires much discipline and coordination within the company which is why most entities focus on getting simple inventory control first.

The demands on a system to track quantities of a simple inventory systems are not complex. Below is a high-level simplification of the relationships.

SIMPLE INVENTORY MODEL

Warehouse

Item
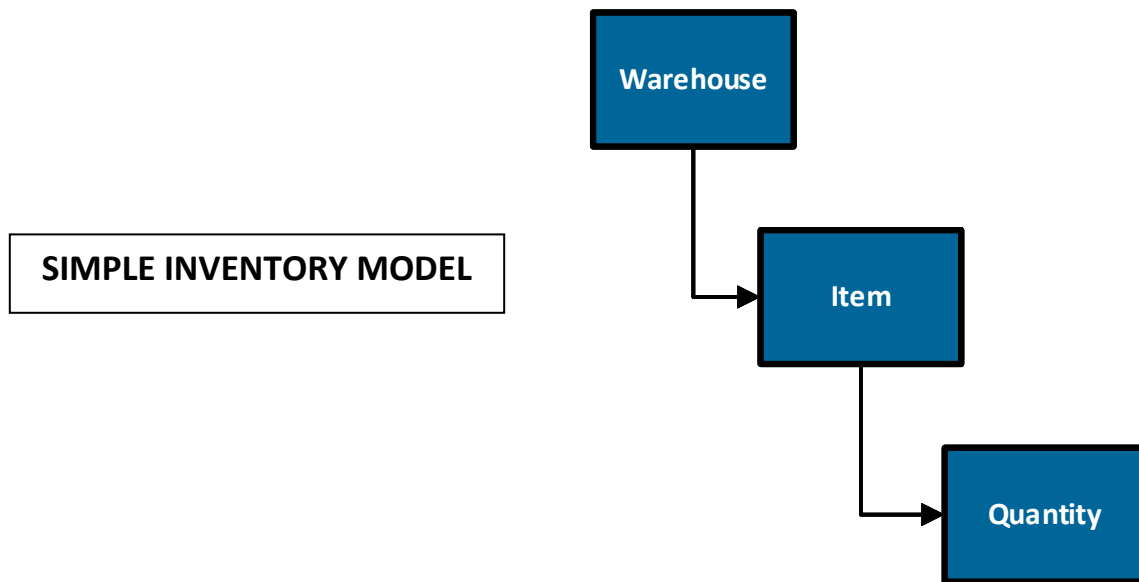
Quantity

The inventory system simply needs to apply proper math at the appropriate time to record the transactions and the quantities are accurate. This chore is relatively simple and is mastered by many simple inventory systems including low cost Excel based inventory systems. Regardless of the system used to do the math, certain inventory disciplines are required before moving to a more complex inventory model. It is important to understand the concept of physical vs perpetual since many systems with sophisticated master planning, replenishment management fail because the data to support these processes are not accurate.

Perpetual inventory is what the system tracks. Whenever a user opens a form within the system to view inventory counts, they are looking at perpetual numbers. The perpetual numbers are system managed and used in all calculations to support any inventory related process or transaction.

The quantity on the warehouse floor is referred to as the physical inventory. This is what you will see when you walk around the warehouse floor. Often, users will point to inventory physically on the floor but the system is showing 0 units. This is symptomatic of the following conditions with the assumption that there are no software defects:

- Transaction physically completed not entered into the system
- Improper setting of supporting tables that govern inventory consumption & replenishments
- Misplacement of physical inventory
- Theft

Based upon the above, it becomes clear that the strategy for the inventory control team should be to implement the following disciplines

- Enforce timely input of transactions
- Cleanse and verify all inventory setups
- Enact physical inventory control procedures

If the inventory disciplines cannot be implemented, the result will be that the physical and perpetual inventory counts do not agree. To deal with this symptom, it is common for the "allow negative" inventory setting to be turned on which further aggravates and institutionalizes the lack of inventory disciplines by allowing transactions to complete without available inventory. Inventory discipline will have to be addressed prior to implementing full warehouse and tracking control.

DOES YOUR STAFF RELY ON EXCEL TO MANAGE YOUR BIGGEST ASSET?

You may be surprised to find that if your business has any or all of the following problems, expect to find spreadsheets tracking inventory:

1. Poor initial setup of the inventory system.
2. Staff are not trained properly
3. Bad data is entered
4. 'File maintenance' is constantly used
5. Your system database is corrupt or just has a bad design

Your staff does not understand the system and/or they don't trust the data, so they use spreadsheets. Often, staff don't realize issues 1-5 exist.

Full Inventory Tracking Explained

A full inventory warehouse control and tracking relies on accurate perpetual counts to help guide the transactions. The following graphic will help you understand that the gap between physical and perpetual must be small otherwise significant issues will erupt in the business.

FULL STORAGE AND TRACKING CONTROL
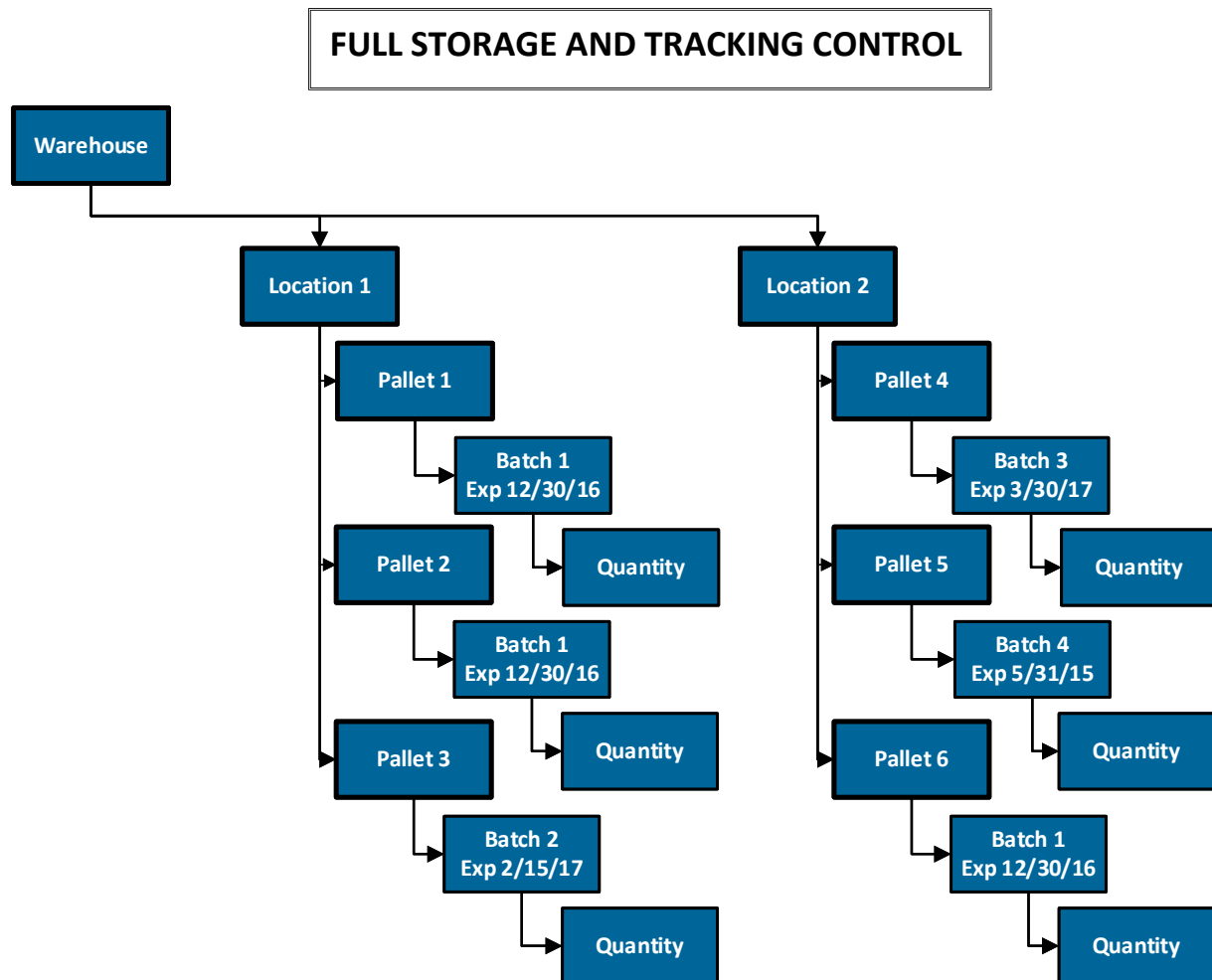
In the above, the warehouse is divided into locations and within each location we have license plates assigned to pallets. One or more pallet is assigned a batch number and the system will track the quantity associated with the batch id. Then each batch is assigned an expiry date. If the perpetual balances are accurate, you should be able to quickly answer the following questions:

- How much of Batch 1 do I have? - 3 pallets, Pallet 1, 2 & 6
- What is my oldest Batch and how much do I have? Pallet 5 Batch 4
- Where is Pallet 5? Location 2
- How much inventory is in Location 1 – Pallet 1 + 2 + 3

In our example, we only have 2 locations, 6 pallets and 4 Batches. Imagine trying to track 35,000 pallets, with 3000 items, 1000's of batch Ids, 5000 locations without a good perpetual system. Then try to track this inventory in a 300,000-square foot facility and implement oldest first picking. The complexity of trying to manage this manually on paper/spreadsheets or physically within the warehouse is overwhelming.

There should be strong motivation to maintain accurate perpetual inventory values because they essential to proper operation of an ERP system.

Here are a few system examples of areas that are affected when the perpetual counts are not accurate:

- Master Planning relies on accurate inventory along with many other parameters to time phase the replenishment of raw materials and finished goods.
- Customer service relies on accurate quantities on hand when informing customers of product availability.
- Production relies on accurate inventory to release production orders that have the raw material availability.
- Purchasing relies on accurate inventory in making purchasing decision.
- Accounting relies on accurate inventory to reconcile the inventory values with the financials and to monitor inventory aging.

The if we focus on specific warehouse efficiencies that are improved we see the following benefits:

1. Warehouse workers are directed to specific location where the inventory is located instead of having to hunt for the inventory to ship. If Location 2 doesn't not have any inventory, then that location will not be reflected on the picking list.
2. Open locations are easily visible for new receipts without constraining the warehouse to placing the inventory in specific locations within the facility. Too often, a company will dedicate physical warehouse space to an item which is underutilized.
3. Warehouse routes can be defined to help establish the efficient movement of product from stock to doc. The picking ticket can be organized so that the worker moves from one end of the facility to the other minimizing zig zagging across the facility.

Keep in mind, the enabling of inventory storage and tracking controls is determined by the requirements. Simple inventory models are widely used and make sense for many applications. We have many clients that use simple inventory models without any issue. However, if your business is currently on a simple model and requires full inventory storage and tracking this document might help with taking the step.

Inventory Add-on Band Aid

When the needs of the business demand more than the ERP system can offer, the result is often the recommendation of an Inventory Add-on System to manage the complexity and integrate back the inventory counts to the ERP System. While specific requirements may be addressed by the add-on, there are many issues that are introduced.

Inventory is at the heart of the ERP system and drives many of the workflows. Logically, placing the inventory system outside of the ERP system does not make sense because you render the ERP system to a basic accounting system role. I have analyzed implementations where add-on inventory and order management systems were implemented that were not required because they replicated the standard capabilities of the system. In effect, the customer paid for twice for the pick/pack/ship functionality along with adopting a system that is twice as difficult to support.

In addition, the linkages between the ERP system and the add-on system will be limited. Complete integration can only be done by the publishers of the ERP system and the add-ons inventory systems must interface either through predefines access points or more risky updating data directly into the tables of the ERP system. This is another point which should suggest that if you are considering an inventory add-on you probably need to be considering another ERP solution.

Conclusion

The needs of your business will drive what capabilities you should considered in your ERP system. What should be noted is that the inventory capabilities of ERP systems are not the same. As a rule, the responsibility of inventory should be within the ERP system not outside. This will offer you better results long term.

Fortunately, there are systems that can be configured that will allow you to start with a simple model and at some point, migrate to a complex model. One of our clients used a simple inventory model for over a decade and when the demands of the business increased could respond to the complex inventory requirements without changing their ERP system.

There are options that will give you the ability to grow without burdening your today with excessive controls.

About Michael J. Conti

Mike is a high energy leader and develops long lasting client relationships. Originally from Buffalo, NY he started his education with a BS in Accounting & MIS from the University of New York at Buffalo. Mike also has a MBA, in Management Information Systems from the University of Dallas. In addition to this education Mike has the following experience and achievements:

- Over 20+ years of experience leading a team of nearly 30 professionals to analyze and solve complex business problems on an international scale.
- Implemented & Developed ERP solutions for over 300+ mid-market accounts with revenues ranging from $100-$500 million.
- Experience in coordinating and deploying technical resources for ERP (Dynamics) for multi-location, multi-user sites on a global scale.
- ERP Solutions specializing in Job Costing, Production Modification, Route Accounting.
- Strong industry experience in Industrial Equipment Markets, specifically Maintenance, Repair & Overhaul (MRO) and Manufacturing.
- Achievements in developing specific IP to meet the needs of Manufacturers and MRO in the Aviation & Defense industry as well as Firearms to include serialization and tracking, routing, disassemble BOMs and projects.

About Clients First Business Solutions

Clients First Business Solutions is a national organization helping clients leverage the power of an Enterprise Resource Planning Solution. We have locations in New Jersey, Alabama, Florida, Illinois, Minnesota, Tennessee and Texas. Founded in 2003, Clients First has since helped implement and support solutions for clients nationally and worldwide. Our expertise, proven methodology and customer-oriented yet pragmatic approach have not only helped us achieve Microsoft Gold ERP competency but also resulted in hundreds of successful ERP projects.

Clients First successfully provides, supports and implements Microsoft Dynamics 365 and Acumatica. Vertical expertise ensures successful projects with our focus in Manufacturing, MRO, Distribution and Food & Beverage industries. Clients First has been the trusted advisor for many businesses looking to drive revenue growth and improve productivity with a partner they can rely on.

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