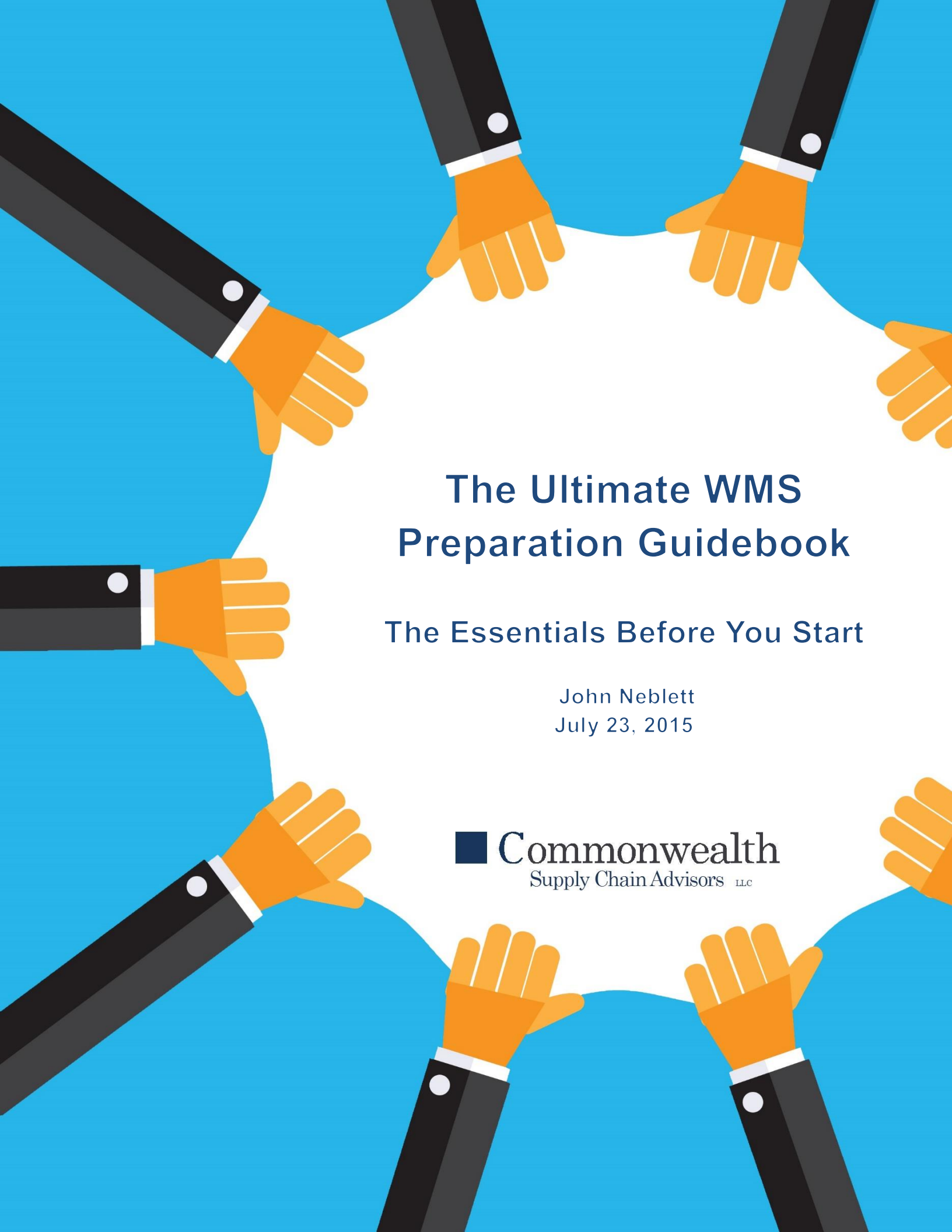


The Ultimate WMS Preparation Guidebook

The Essentials Before You Start

John Neblett

July 23, 2015

Commonwealth
Supply Chain Advisors LLC

Commonwealth
Supply Chain Advisors LLC

Table of Contents

Introduction 3
Chapter 1 - The Team 4
The Leader 6
Required WMS Implementation Experience 6
The Required Leadership Skills 6
Team Structure 6
Skill Set 6
Chapter 2 – Project Preparation 8
Risk Management Plan 8
Integrated Project Plan 9
Architecture Plan 10
Financial Reporting Plan 11
Realistic Timeline 11
Chapter 3 - Managing the Project 12
Implementation Methodology 12
Basic Communication 13
Project Rhythm 14
Status Reports and Meetings 14
Task Assignments 14
About Commonwealth Supply Chain Advisors 17
Additional Resources for WMS Selection and Implementation 17

Commonwealth
Supply Chain Advisors LLC

The Ultimate WMS Preparation Guidebook

The Essentials Before You Start

About the Author

The WMS Doctor: John Neblett

In this guidebook, 30-year industry veteran John Neblett shares a success formula that he's developed over the course of 50+ WMS implementation projects, or as he puts it, "the school of hard-knocks."



"Doc" Neblett leads Commonwealth Supply Chain Advisors' WMS practice. His career has been dedicated to helping companies successfully transform their supply chains with the use and proper deployment of technologies such as material handling automation and supply chain execution systems. His unique perspective on these projects has been gained through the various roles he's held as a systems user in operations management as well as through his work as an operations and IT consultant.

Introduction

Lessons Learned from a Lifetime of Implementing WMS

As with anything in life, the more you know and the more experience you have, the more equipped you are to successfully undertake a task or project. With 50+ WMS project implementation projects behind me, I look back and think about how much easier they would have been if I had just known at the time how to be a better leader, how to communicate more effectively with senior management, or how to use a different implementation methodology. As I dug in and further analyzed why certain projects went well and others went poorly, I was able to neatly categorize each misstep and success into to one of three areas:

- Team Leadership, Structure and Skill Set
- Proper Project Preparation
- Tight Project Execution (Hint: Communication is key)

This paper is a guidebook for companies embarking on WMS implementations. Based on everything I know now, I outline how to prepare for a successful WMS implementation project and get it right the first time. At the end of this guidebook, you will know what you need to do before you sign on the dotted line with your chosen WMS vendor, how to structure your team and what skillsets to include, the pros and cons of the different implementation methodologies, and how to create project management tools that ensure your team is in lock step with your WMS vendor.

Chapter 1

The Team

Beware: A Changing Breakdown of Implementation Costs

When I started my career in supply chain technology in 1978, Jimmy Carter was in the White House, *Star Wars* was the big box office hit, and you could implement WMS for about a million dollars. In today's world, the total estimate to implement a Tier 1 WMS is just slightly over a million dollars for a single site (and everybody is still talking about the new *Star Wars* movie due out later in the year). While hardware has come down in price, labor and everything else costs more today than in 1978. So how are vendors able to deploy a significantly more feature-rich system for the same price as 35 years ago? Part of the answer is certainly that the products are more standardized now than in the past. But a large part of the answer is that the level of involvement required by the company purchasing the WMS (the client) has shifted.

> "Today, the typical WMS client will take on the majority of the implementation effort whereas in 1978, the vendor shouldered most of the effort."

When I implemented my first WMS, the project was sold "turn-key." In other words, the WMS vendor did the majority of the work and turned over the "keys" to the client at the end of the project. Contrast that with a typical WMS engagement today where the number of project hours assigned to the WMS client can be twice the hours assigned to the WMS vendor. See the Sample Task List Excerpt in figure 1. Today, the typical WMS client will take on the majority of the implementation effort whereas in 1978, the vendor shouldered most of the effort.

Is this a good thing? From a financial perspective, it is good. Internal resources cost less than vendor resources. But from a team execution perspective, it is not. The problem with this model is that the client often does not have the skilled resources on staff to execute the task required in the time that is allotted or to the level of quality required.

If you find yourself in this situation, you have two options:

1. Push tasks back to the vendor and have them play a bigger role. (Note: Negotiate the WMS vendor's exact tasks and rate before you purchase the software licenses, as it will give you more negotiating leverage).
2. Augment your project team with experienced resources.

Both of these options might cost a bit more in the short-term, but the project will be much more successful in the long-term. As Joseph Addison wrote in 1712, don't be "penny wise and pound foolish." This is not the time to price shop.

Figure 1: Sample Task List Excerpt

Task(s)	Scope of Work	Assumptions	Client Responsibilities	Consultant Responsibilities	WMS Vendor Responsibilities	Deliverables
Warehouse Management Implementation						
ASSESS PHASE						
Continued…						
Solution Design Sessions	Review current state process flows and functional requirements Design and document future state processes Identify standard process and key exception test scenarios by functional activity, note any potential gaps for follow up	Client has documented current state flows, functional requirements, and process improvement wish list	Document new standard and exception process flows Identify test scenarios (standard and exception based - end to end and system scenarios) Identify POC Scenarios	Support future state design sessions to ensure adherence to low modification goals and minimize impact to business processes external to operations. Manage/monitor all takeaways to ensure timely identification and resolution of gap issues Support VENDOR development of future state process flows Support VENDOR development of POC prototype	Lead sessions to design future state, discuss configuration options, manage and address takeaways through functional and gap analysis, begin prototyping processes for Proof of Concept	Proof of Concept prototype data Draft Gap Analysis
Interface Definition	Identify interfaces required, develop specs based on communications and protocol Map data from customer files to standard WMS interface formats	Interface overview complete Client map to VENDOR standard interfaces	Understand data requirements through end to end processes across systems Document specs and data maps	Support interface design meetings to ensure minimal impact to business processes external to DC operations Support VENDOR development of interface technical design and interface mapping.	Provide background on use of standard WMS interface fields Document gaps or takeaways if appropriate Need call out for VENDOR to own Integration mapping and specification	Interface Specifications, Data Maps
Setup Workshop	Provide Client with detailed training on standard configuration techniques for WM, consulting on approaches and options to setting up the application	Six participants enrolled in a class to be conducted at WMS; will be conducted at Client facility. Requirements listed on Access Requirements Check List have been met, one warehouse, one instance	Deliver completed customer homework assigned at Product Introduction Confirm process assumptions arrived at during Solution Design Record follow-up items	Support-manage BE completion of customer homework output from the Set Up workshop. Manage/monitor all takeaways to ensure timely identification and resolution of gap issues Develop-manage resolution of gap-modification issues Develop POC acceptance test criteria Support BE set up workshop activities	Conduct setup workshop; incovendororate process and set up decisions reached during Solution Design, reference project experience and best practice knowledge throughout workshop	Partially configured base application that supports key components of standard operating procedures Document open / gap considerations
Proof of Concept	Conduct a structured / detailed demonstration of each critical process Validate software capabilities against designs and processes	Agenda has been developed by project managers of both teams and matches the appropriate timeframe. Proof of Concept scenarios cover all standard conditions/processes and exception conditions when possible	Validate standard procedures and process flows, reporting requirements, and resolution to all gap analysis items, including functional specifications if necessary.	Support validation of standard processes and adherence to future state flows. Develop-manage resolution of gap-modification issues Execute POC evaluation criteria	Prepare data for scenarios Lead Proof of Concept, complete gap analysis, revise/update Solution Summary	Completed Proof of Concept
Solution Summary	Compile, revise, review, and validate the Solution Summary throughout the Assess Phase	No enhancements are required Customer responsible for all reports and data conversion programs	Assist with finalization of Solution Summary	Support VENDOR development of Solution Summary Ensure resolution of all gap-modification issues within the solution summary	Assist with finalization of solution summary materials.	Compile system set up, configurations, interfaces, gap analysis, and customer and WMS deliverables into Solution Summary

Now that you understand and have clearly defined the tasks that your team will be accountable for and which ones the WMS vendor will handle, it is time to build your team.

The Leader

Required WMS Implementation Experience

The first decision you must make after signing on the dotted line is Project Leadership. Who is the one person who will be responsible for managing the project? Often when I ask this question of clients, they name an individual from their distribution or IT organizations. I then ask, "What experience does he/she have with running a WMS implementation?" The response I often get is something like, "He/she is an IT manager and he/she managed our ERP implementation." At this point I explain that a WMS is a different animal.

Let me draw an analogy from personal experience. I grew up working on cars. I rebuilt my first engine at twelve, and restored a 1964 Ford Fairlane at fifteen. I've been working on production cars my whole life. So when my son wanted to race a stock car I thought "Sure, this should be easy." Boy, was I wrong! A late model stock car is NOTHING like a street car. It took me several years of working on that car every night and racing on the weekends before I started to really understand how to go fast. A WMS is like that. You may have great experience in a related discipline like ERP, but unless you have "lived and breathed" WMS, it is hard to have a true appreciation for what it takes to implement one.

Make sure your leader understands that a WMS implementation is going to be different from any other system implementation that he/she has been involved with and builds his/her team accordingly.

The Required Leadership Skills

Leadership of a WMS implementation can make or break a project. When we think of leadership we usually discuss it in terms of Project Management. However, after years of good and bad projects, I can say with some authority that a good Project Manager is not always a good leader. I have seen projects run by consummate leaders who had no formal project management training be very successful. Likewise, I have worked with Project Managers with extensive certifications who struggle to successfully lead a small team.

Leadership is not about keeping track of tasks and schedules or writing status reports and risk assessments. Leadership is about empowering and protecting the team. A good leader moves the obstacles and gives credit for a job well done. A good leader is one who "walks the walk," embodies impeccable integrity, is honest, and gives unselfishly, yet is willing to draw a line in the sand and not back down when necessary. In short, a good leader puts the team in front of individual desires.

When you put together this type of team—strong leadership with outstanding members coupled with a clear, singular focus—you get results.

Team Structure

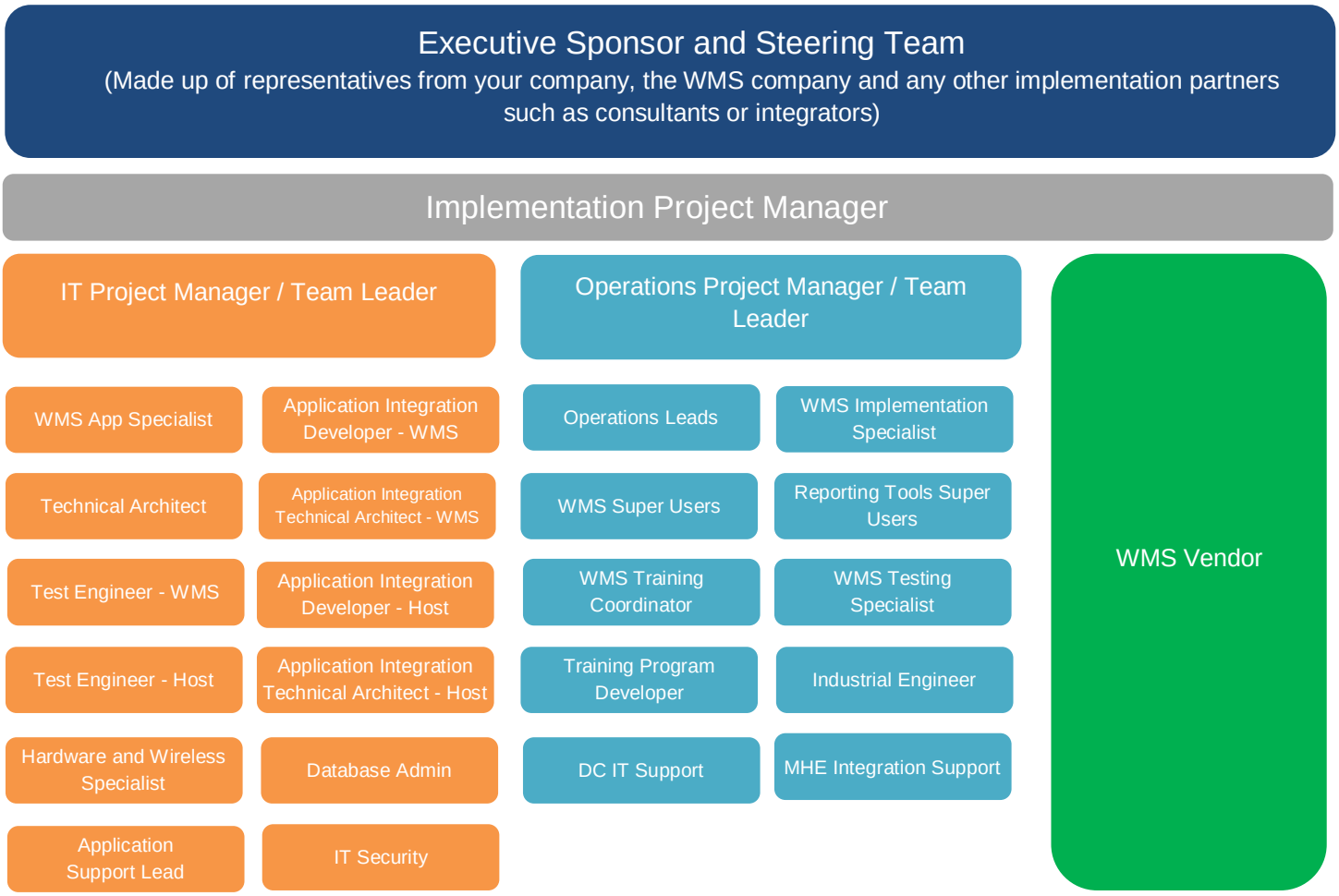
There are as many books on team structure as there are blades of grass, so I'm not going to belabor this topic. Every study I have read suggests one leader for no more than about twelve individuals. If the leader is responsible for too many people, execution may suffer. If the leader is responsible for too few people, process takes the place of communication. I have worked in organizations where a manager will have two to four reporting staff. Unless the manager of a team that small executes alongside and as an equal, then the manager "manages for the sake of managing," and team performance is sub-optimized.

Skill Set

A WMS is different than any other system in that it requires that implementation team members know the definition of physical structures (rack, docks, etc.) and physical material flow in a logical system. To perform this configuration, the individuals must not only understand the capabilities of the WMS, but also the best operational practices. In addition, Project Participants need to know coding skills to make system modifications and write machine-to-machine integrations; reporting skills to write management reports and labels; testing skills to ensure the configured system operates as required; and training skills to develop and educate end users. When all of those roles are filled, you have the requirements for a team that is both broad and deep. The

lack of highly skilled individuals in any one of the key roles can spell, at best, schedule slippage and, at worst, complete shutdown of the system. Figure 2 below shows a typical WMS implementation team structure and the associated required skillsets.

Figure 2: Sample WMS Implementation Team Structure



Chapter 2
Project Preparation

As mentioned earlier, undertaking a WMS project is a major strategic decision. It is a large investment in both time and money, and the outcome of the project will last for years. Consequently, it is essential that all effort is taken to execute the project in a most efficient and focused manner. Achieving the goals of the project begins BEFORE the project is started by clearly defining roles, processes, and execution, as well as disseminating relevant information to all those involved. Any anticipated issues that are identified must be resolved before the project is started.

> "Achieving the goals of the project begins BEFORE the project is started by clearly defining the how the project will be executed and disseminating this information to all those that will be involved in the project."

Risk Management Plan

The area of Risk Management is a bit subjective and tends to require some experience to "see" into the future. Once again, an experienced WMS Project Manager is essential to anticipate possible points of risk. The areas of risk for a WMS project are primarily Financial and Schedule. There are many factors that can influence these two areas, but they all typically lead back to project preparation. Every project I have been involved with that had trouble had the root cause in a decision or lack of decision in the Project Preparation phase. Get it right at the beginning, and risk decreases dramatically.

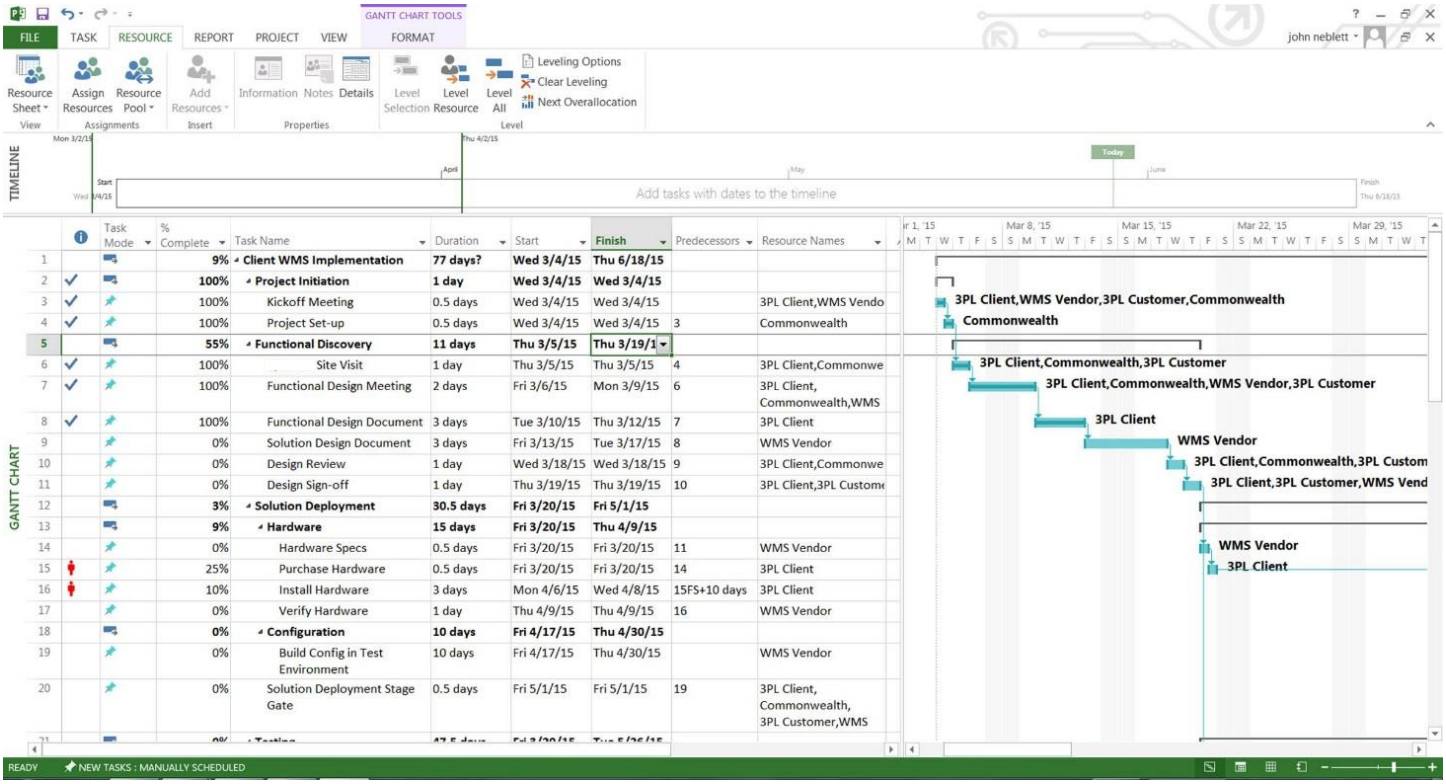
The second part of the Risk Management Plan is defining how to handle issues when they arise. Sometimes this is a separate plan altogether, the Issue Management Plan, which I tend to look at it as a sub-set of the Risk Management Plan. Before starting the project, define how issues will be managed. Answer these questions: What constitutes an issue? How are issues to be reported? Who is responsible for collecting the issues? What is the process to review and decide on actions to resolve the issues? How will criticality of issues be assigned? What is the criteria for successfully resolving an issue? What is done with issues that cannot be successfully resolved? What is the escalation plan for issues that cannot be resolved?

Answering these questions before starting the project will put the necessary processes in place to track and resolve issues.

Integrated Project Plan

Before starting the project, make sure you develop an Integrated Project Plan that includes the project plans of all work streams. This is a bit tedious but can be done easily using Microsoft Project. The primary reason that you want to have an integrated plan is to ensure the dependencies among the different work streams are rationalized. Say, for example, that the WMS vendor is done with configuration and development on March 1. Their plan shows starting Integration Testing on March 1. When you look at the IT project plan, however, it shows completion of middleware and ERP integration April 1. So in this example, IT will not be ready to start Integration Testing until April 1. If your go-live date is driven by the WMS vendor's plan, it won't show the month delay. By developing an integrated plan and assigning dependencies and resources, you the PM can ensure that the tasks and resources are allocated appropriately. Figure 3 below shows and example of an Integrated Project Plan.

Figure 3 – Sample Integrated Project Plan

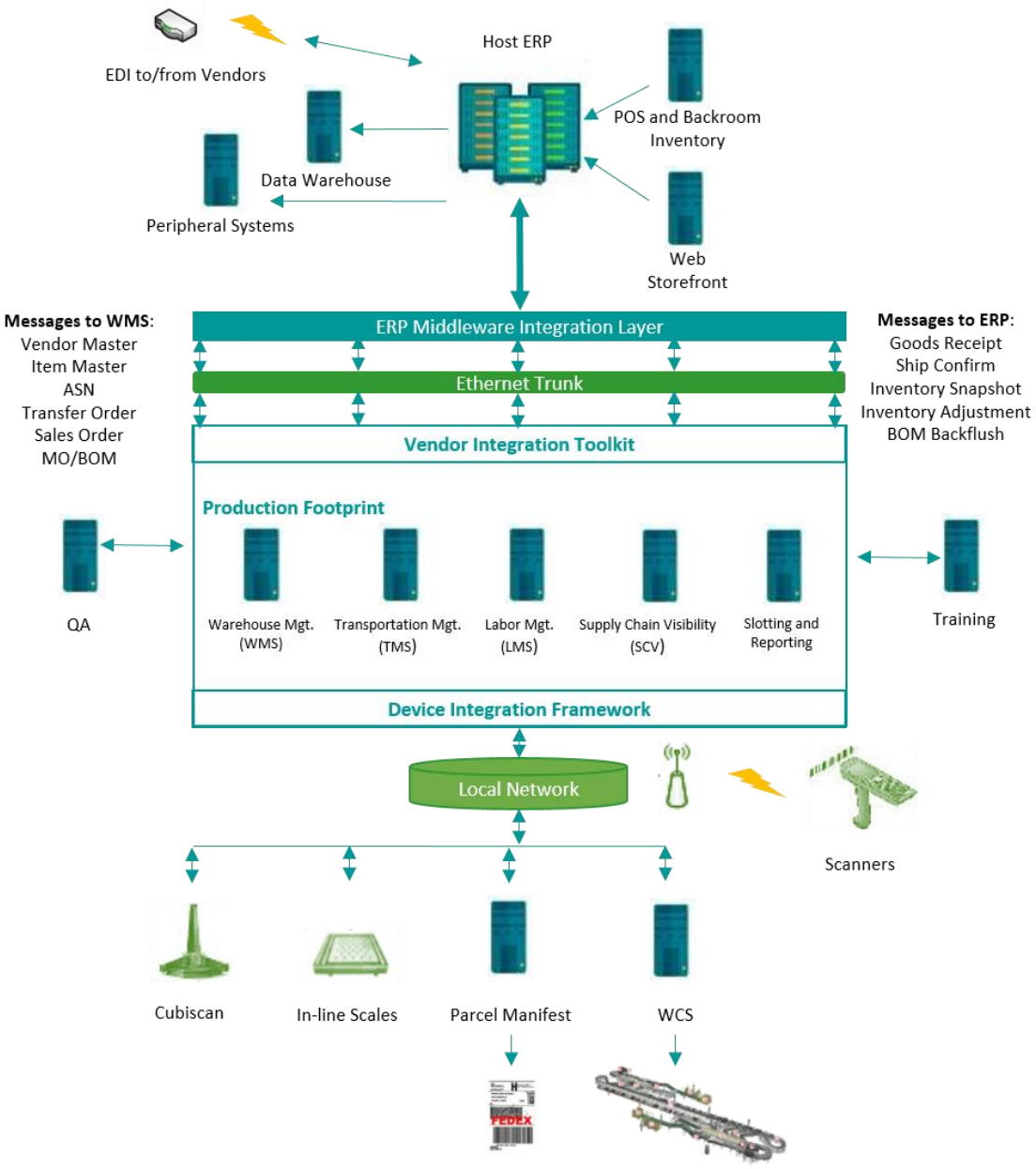


Architecture Plan

Part of project preparation is to understand how the WMS will be deployed into the client's existing IT environment, including what hardware will be deployed, where it will reside, what software will be deployed on what hardware, what the network will look like (internal, external, dedicated, shared, etc.), who will do the various deployment tasks, who will support what components, what hardware is needed in the warehouse, whether there is an existing RF network and if it is sufficient for the new WMS, whether there are existing RF scanners and whether they can be used, and a dozen more questions. The answers to these questions define the architecture plan and lay out the hardware deployment plan. (See Figure 4)

This step is often overlooked before the project is started, but it is critical. In fact, I recommend you perform this analysis prior to signing the contract. I was involved with a project where the client went through the contract process just to discover several months later that the company would need to spend a significant amount of money on hardware to deploy the WMS. You can imagine that conversation in the corner office.

Figure 4: Architecture Plan



Financial Reporting Plan

The person in the corner office is going to want to know how much the project is costing. Put in place a document that tracks project spending, and then update the financial stakeholders periodically. Your company may have a template and procedures that specify what and how to track spending. Larger companies may use a financial report out of their ERP system. For smaller companies, you may have to develop an Excel spreadsheet.

Regardless of how you report the data, make sure you provide the baseline, actual, and projected financial spending. The report should also show when the spending is expected to occur. One way to determine projected spending is from the Integrated Project Plan. MS Project provides the framework to assign cost to resources and report baseline vs. actual spending, but you will need to keep up with changes in the project and update the plan continuously in order to have MS Project provide meaningful reports.

The bottom line is that the project will most likely cost at least somewhat more than what was initially budgeted, which means going back to the corner office for more money. The conversation is always easier when you have kept the "check signer" in the loop and up to speed.

Realistic Timeline

My high school speech teacher told us when making a speech "tell them what you are going to say, tell them, then tell them what you said." That advice still holds true today. If there is only one thing I can pass along it is this: If your organization has never done a WMS project, it will take longer and be harder than you expect. Don't shortcut the time line!

I was recently talking to a client who wanted to implement a new WMS before their busy holiday shipping season. "The system must be up and running by the end of Q3," he told me. I asked, "How much risk do you want to put the business in?" He replied, "Christmas makes or breaks our year. We can't have anything go wrong." "Then defer the WMS go-live until after Christmas," was my response.

The vast majority of clients I have worked with have a go-live date established before they have purchased the WMS. These clients tell the WMS vendor that it must be implemented by a certain date. And the WMS vendor says, "Sure we can do that. Just sign right here." Then those projects either get delayed or have trouble at implementation. So why not be realistic up front? Recognize that a WMS is a mission-critical system and can shut down your business. Make a realistic plan and have a contingency if the project develops trouble.

I often get asked "What is a realistic time frame for a WMS implementation?" Unfortunately, that's like asking "How long does it take to build a house?" Define the house you want to build, and a contractor can tell you how long it will take. Likewise, until your company defines your WMS requirements and understands how it is going to be implemented, it is difficult to say how long it will take. However, since inquiring minds want to know, in rare instances I have seen very simple (with no changes) WMS implementations take six to eight weeks. I've also seen implementations take well over a year, especially if the WMS project is part of a new building or major material handling automation project. For example, one project I led took eighteen months from start to finish but included a new 1,000,000 square foot distribution center that utilized seven miles of conveyor, five sorters, and multiple three-level pick modules.

So there you have it, from easy to hard. So should you proceed with your WMS go-live? Think of it this way: You made it through last Christmas without the WMS. The worst thing that could happen if you delay is having to use your current systems a bit longer and have some additional labor costs. The worst thing that could happen if you go live too early is that you fail to ship product. Which would your rather have?

Chapter 3
Managing the Project

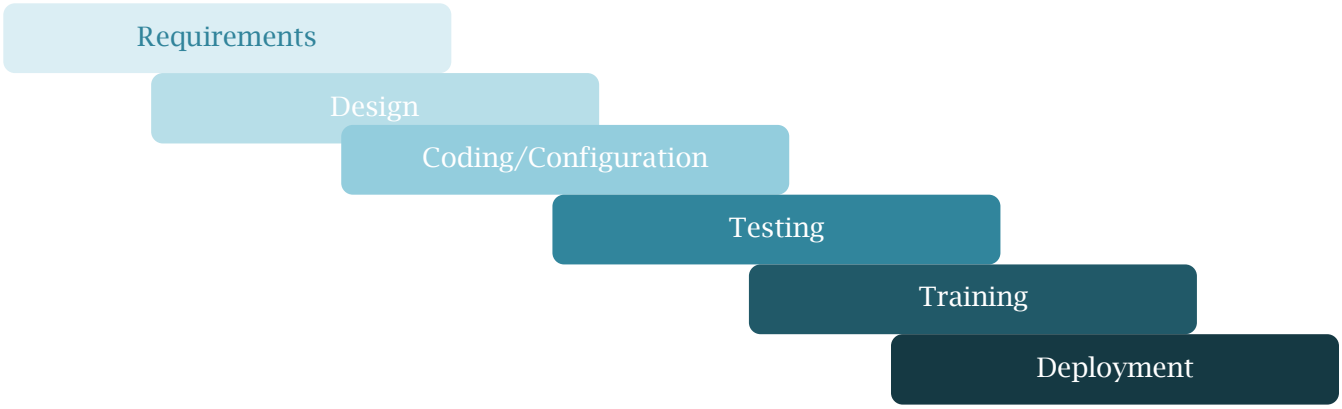
Implementation Methodology

Every WMS vendor has a different implementation methodology. However, they fall into two broad categories; classic waterfall and rapid deployment. Within each of these categories, the vendor will differ somewhat, often using different terms and perhaps order of tasks.

Let's look at the basic structures of these two methodologies and then discuss some pros and cons.

The waterfall methodology is the oldest and most popular project methodology. (See Figure 5) It is a sequential process, starting with determination of the requirements for the project and ending with a "big bang" go-live. These projects typically have discrete milestones, or "stage gates," with a predefined timeline. The typical stages of a waterfall style project are Requirements Definition, Detailed Design, Coding and / or Configuration, Testing, Training, and Deployment. As you can see, this is a linear methodology, and decisions or misses in earlier steps can interfere with later steps. For example, if the design of a critical interface message was missed and not discovered until testing, deployment must be delayed until the message is coded and tested.

Figure 5 – Classic Waterfall Methodology

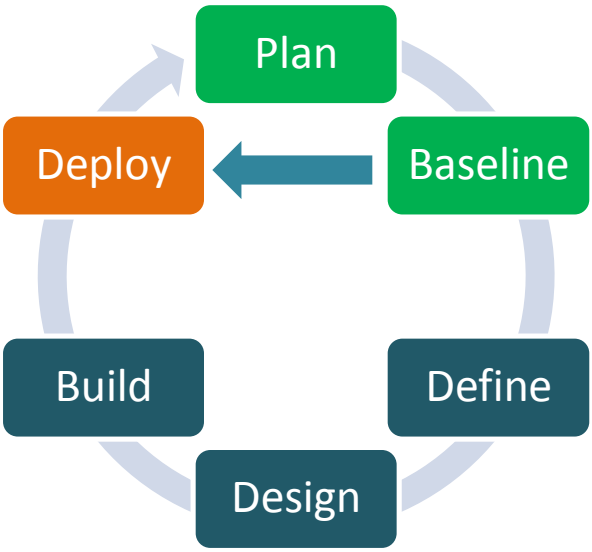


The rapid deployment methodology takes a different approach. You can think of it as circular, or "trial and error." (See Figure 6) The rapid deployment methodology begins with installing the WMS and immediately training a core cadre of client users. Depending on how closely the base implementation meets the operational needs, the client may decide to immediately go live with the system or may decide to build / configure additional functionality. The concept here is that by using the system, the client determines what they need and when to deploy it. Thus, we typically see a series of discover, build / configure, and test cycles. *Note: a key requirement for the rapid deployment methodology is the ability for the new WMS to operate "in parallel" with the current processes or systems. In this way, if any new functionality runs into major problems during deployment, the operation can easily fall back on the old processes until the bugs can be worked out of the new system.*

To be clear, both methodologies get to the same point. However, the paths are quite different. The other factor to consider is the comfort level of the IT department with a rapid methodology. Most IT departments I have worked with are very comfortable with the waterfall methodology but much less so with a rapid deployment

methodology. This can set up strife between the vendor and client IT that can lengthen a project and interject a higher cost.

Figure 6 – Rapid Deployment Methodology



So, what are the pros and cons of each of these methodologies? As mentioned earlier, the waterfall is most easily understood and accepted in IT organizations. Plus, it is easy to communicate milestones and track cost using a waterfall methodology. Thus, when building the team and laying out task responsibilities, it is easier to define when certain tasks should start, as well as to estimate the length of time a task should take. The drawbacks to the waterfall methodology are twofold. As mentioned earlier, misses can interfere with timeline and cost. Also, there is typically a fairly heavy up-front cost before the organization starts to get a return from their investment. This cost may be too much for small companies to bear, forcing them to turn to rapid deployment.

The major benefit to the rapid deployment methodology (this is the method often used by cloud-based WMS providers) is lower up-front cost and a shorter time to value. The major "con" to rapid deployment is that the functionality is not fully thought through and documented prior to building or configuring the system. Thus, there can be a significant amount of rework.

So what is the bottom line? There is no one right methodology. Typically, I see larger companies use the waterfall methodology and smaller companies use the rapid deployment methodology. Is this due to company size? It probably has more to do with the complexity and extensiveness of the requirements than anything else. A small company will often have less complex distribution requirements than a large company, especially in the retail arena where multi-channel distribution is becoming more prevalent.

Basic Communication

There is no substitute for clear, crisp communication. A WMS project can suffer if team members do not understand how to effectively communicate with one another. This foundation has been stressed over the past thirty years by two major factors: an increasingly diverse workforce and the expansion of personal technology.

Back in 1978, there were no personal computers, no email, no iPads, no internet, no Skype, no Go-to-Meeting, and no texting. Instead, everyone learned how to write a memo. It had a defined structure, and everyone adhered to that structure. When I started my career in 1978, if you wanted to communicate with someone you either wrote them a letter (if outside the company), a memo (if inside the company), or called them on the phone. And it often took time to get a response.

Today's world is in real time, and there are often interesting encounters between the old and new schools of business communication. I remember working in company with an open office plan. A co-worker sitting with his back to me sent me an email. So I turned around and answered him. He responded by sending me another email. So I turned around and answered him. So it goes….

You may laugh at this example, but when dealing with a project team that could be in excess of twenty-five people, communication can be a major issue. To one professional, a text message carries the same importance as an email; it's just an alternate means of communicating. But to another worker, the text may not be viewed with the same level of importance as an email. Establishing a common understanding of how the team is going to communicate is critical to the success of the project. "I didn't get your text" could mean a delay in the project.

Project Rhythm

The establishment of standing meetings and documents to pass on information is critical. I call them Project Rhythms because they are established at the beginning of a project and are always held. Examples of these methods of communication are Status Reports, Status Meetings, Stage Gate Reviews, Functional Reviews, Design Reviews, Testing Reports, and Readiness Reviews. These meetings should be defined in the Integrated Project Plan, and meeting invitations sent to all attendees. Templates of any documents that are going to be used should be distributed and agreed to prior to the kick-off meeting. Then when the project starts, all the standing meetings and documents have already been put into place.

Status Reports and Meetings

Status Reports take many different forms. Some are very short and to the point. Others are very long and detailed. You need to decide what works best for you. I tend to skew toward the short and sweet side. I like color codes to indicate status of project categories, such as Risk, Financial, Schedule, etc. Think of the categories as the Executive Summary.

Also, I like to have the individual Project Managers or Team Leads fill out a status report for their areas of responsibility and present it at the Status Meeting. If I am the overall Program Manager, I always personally complete the overall Project Status Report. Thus, the document that gets distributed to Senior Management includes a page for the overall project status and then the status of each work stream (IT, WMS Vendor, Distribution, etc.).

One word of caution here. If you are going to use this method of status reporting, you must come to an agreement with the other report contributors on how to determine and report project issues. Does a one-day slip in one work stream mean the overall project goes from on-time to behind schedule? You need to report a fair view of project status, but there is a balance regarding the granularity at which you report. Too granular, and you run the risk of reporting only problems. Not granular enough, and potentially major issues could be overlooked.

Task Assignments

Individual task assignments should flow out of the Integrated Project Plan. If you use Microsoft Project, it is easy to assign resources to tasks and then print or email a report of individual task assignments. As a sidebar, the Project Plan needs to be a living document. It should be updated continuously and the full plan distributed to all team members. Another key point: you need to be clear on how the plan will be updated and by whom. I ask each work stream leader (IT PM, Vendor PM, etc.) to update his specific plan on a weekly basis, and I take the responsibility for updating the integrated plan. How you do that is up to you, but it's important to make sure everyone on the team knows of the updates and coming events.

One additional point: I have had many discussions over the years with individuals regarding the skillset for the Project Manager. My contention has always been that the Project Manager should be one that has lived multiple cradle-to-grave WMS implementations. The reason for my position is that the Project Manager is the one person responsible for the Integrated Project Plan and the only person who can look across all work streams and see if all tasks have been included in the plan. Furthermore, the Project Manager is the only person who can determine

if the level of effort assigned to a specific task is reasonable or not. The Project Manager is the only person who can determine if the task dependencies are correct or not. If the Project Manager has never done a WMS implementation, he will not be able to determine if the details of the plan are complete and accurate.

Conclusion

Properly preparing for a WMS implementation is the key to a successful project. In this paper, I've provided insights into what you can do before you sign on the dotted line with your chosen WMS vendor to minimize cost or schedule overruns, how to structure your team and what skillsets to include, the pros and cons of the different implementation methodologies, and how to create project management tools to drive communication, set expectations, and stay on track for an on-time go-live.

When you are faced with the strategic decision to implement a WMS, remember there is no substitute for experience.

Commonwealth
Supply Chain Advisors LLC

About Commonwealth Supply Chain Advisors

Commonwealth Supply Chain Advisors is a distribution-focused supply chain consulting firm that provides companies with the technical expertise and objective guidance required to design, implement and operate successful distribution centers. The firm is recognized as one of the "Top 100 Great Supply Chain Partners," by Supply Chain Brain, for consistently making a significant impact on its clients' supply chain efficiency, customer service and overall performance.

Commonwealth is based in Boston and works with clients across the globe. For more information, visit www.commonwealth-sca.com or contact Jennifer Thomas at (513) 533-0139.

Additional Resources for WMS Selection and Implementation

Whitepaper: Selecting the Right WMS

Whitepaper: An Objective Guide to Selecting a WMS

Whitepaper: Six Tips to Avoid a Failed WMS Implementation

Article: A Tier 1 Warehouse Management System – When to Consider…and When to Be Cautious

Article: Task Interleaving: Critical Functionality for Pallet Handling Operations

Article: Do You Really Need to Replace Your WMS?

Article: SaaS WMS – A Look under the Hood