



WMS in the Cloud is Ready for Prime Time in 2019

Lessons Learned, as Number of Cloud WMS Deployments Accelerate.



Thought Leadership



Throughout most of the software industry generally, and in the supply chain specifically, the move to “Cloud-based” solutions has been accelerating rapidly.

What is happening? The reality is that today’s Cloud-based solutions are simply the latest in a series of approaches for software implementation in which the solutions are deployed outside a company’s own infrastructure. Previous terms for this approach have included hosted solutions, on-demand, software-as-service (SaaS) and now Cloud.

While these terms all connote the general approach of remote application delivery, there are some differences in today’s Cloud-based solutions versus these earlier concepts. Hosted or on-demand solutions, for example, often involved deploying software for a given customer on a dedicated hosted server, in some cases using a front-end technology such as Citrix to deliver the application screens to users. These were not true web-based solutions.

Cloud deployment, however, is truly web-native, and uses newer technologies to allow solutions to run across multiple computers (server farms), harnessing as much computing power as a given user needs at any moment in time, without needing to purchase or lease a giant server to meet occasional processing spikes.

Similarly, Cloud today also often involves a “multi-tenant” model, in which a single instance of an application can support multiple facilities across different companies. This is not a trivial change – many supply chain software solutions are still not able to operate in this manner today. This technical approach reduces application management costs significantly for the provider, which can then in turn offer lower prices to customers.

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Of course, some companies continue to want their own server in the Cloud, or have a set-up in which the different tenants are all facilities in their own networks.

The Advantages of Cloud Deployment

There are a number of benefits to deploying supply chain software in the Cloud. These include:

Lower Cost implementations: The more controlled environment simply allows software vendors to set-up new customers at much lower costs than traditional deployments (including lower travel costs).

Time-to-Value: The lower implementation costs come in large part from the significantly reduced time it takes technically to set up a new solution/customer. This has the advantage of not only more consistently meeting tight implementation schedules, but also accelerating time-to-value (meaning when positive payback occurs), an increasingly important consideration in many companies’ investment decisions.

Lower Upfront Costs: In addition to lower deployment costs, Cloud solutions are in general priced with some kind of subscription model, rather than an (often large) upfront software license fee that is the norm in traditional deployments. This will also often speed up the payback period, eliminate or reduce the need to get a large capital investment approved, and support a more variable cost supply chain model.

Much Lower Internal IT Costs over Time: Requirements for in-house administration/maintenance of the software falls dramatically with Cloud deployments, reduced by as much



as 90%. This is also true for difficult and sometimes expensive efforts to guarantee “high availability” for the software, critical for WMS and something leading Cloud providers should be able to easily deliver.

Portability: As facilities open and close, it will generally be easier to “move” supply chain software in the Cloud to a new place, such as a different distribution center, versus traditionally deployed software.

We will note, however, that some commentators and software vendors sometimes overstate the deployment advantages of Cloud solutions. This just means that many tasks (e.g., as-is/to-be process development, training, change management, etc.) all must be performed regardless of how the software is to be deployed.

Nevertheless, it is for all these advantages and more that Cloud software for the supply chain has reached critical mass. Gartner, for example, recently predicted that by 2020 over 90% of spending on Supply Chain Execution systems (which includes WMS) will be for Cloud-based solutions.

Understanding Cloud Options

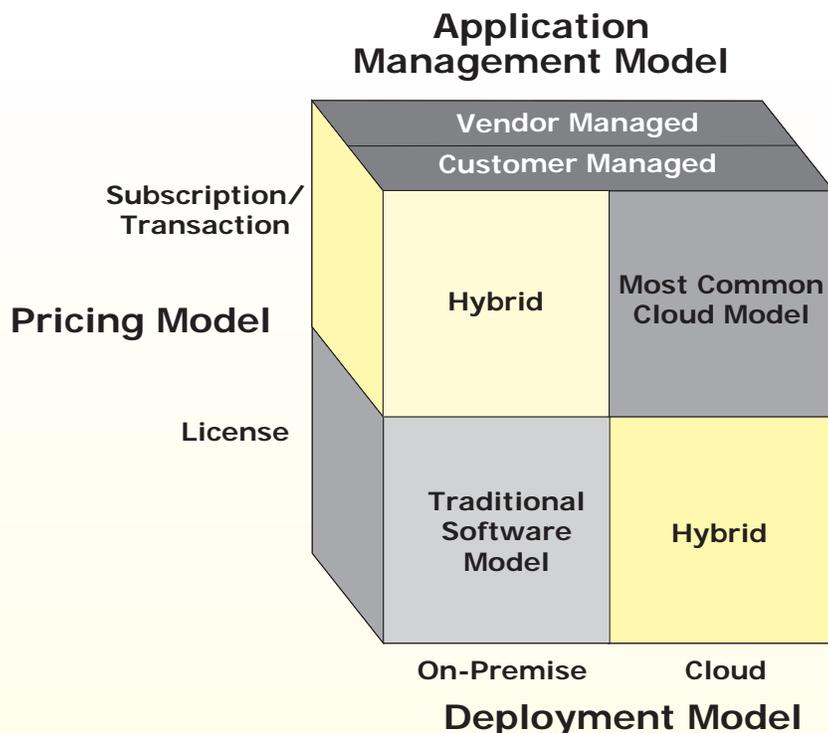
Despite the rapid growth of supply chain technology delivered in the Cloud generally and for WMS specifically, there are often still a lot of uncertainties among potential adopters. To sort out the options, the following discussion may help.

There are really three dimensions to consider in WMS implementation:

Deployment Model: Will the software be deployed in the Cloud, or installed inside the four walls of the enterprise (on-premise)?

Pricing Model: Will the software be acquired under a traditional upfront license (and generally then annual support fees), or through some type of subscription/transaction-based pricing?

Management Model: Will the acquiring company manage the application however it is deployed or will the software vendor do this work, under what is generally called “managed services.” These options are illustrated in the graphic below:





The traditional WMS software model, of course, involves an on-premise deployment with upfront license pricing. Cloud deployments are generally delivered with subscription pricing.

But other combinations are possible. For example, many software vendors will support on-premise deployment, but with subscription-based pricing. Other vendors can deliver in the Cloud but sell with upfront license pricing.

Potential WMS adopters should understand these decisions and make sure which options WMS vendors they are evaluating support.

In some cases, hybrid options are possible. For example, one Softeon 3PL customer has a number of sites deployed in the Cloud, but for perceived bandwidth issues initially had two facilities running on-premise systems. One of those two later migrated seamlessly to a Cloud environment with great ease.

Finally, regardless of deployment or pricing model, different management models should be available, either the customer managing the WMS itself or relying on the vendor for those services. This happens more often with Cloud deployments but is gaining market traction in either type of install.

WMS in the Cloud Has Been Late to Take Off

Cloud deployment has become widespread in other so-called supply chain execution application areas, notably Transportation Management (TMS), supply chain visibility and Global Trade Management (GTM).

Yet, WMS was late to the Cloud game. Why is that the case? Key factors include the following:

The Largest WMS Vendors have not had Strong Cloud Support: The largest WMS providers have generally had weak support for Cloud deployment, and in some cases lack the ability to technically support the “multi-tenancy” model at the heart of many Cloud deployments. This fact has naturally slowed market

progress on WMS in the Cloud versus if these vendors had offered stronger support.

While in some cases, as noted above, there are technical reasons why these large vendors have not been big Cloud supporters, the heavy dependence on implementation service revenues by these same large firms is clearly also a factor, as significantly less expensive Cloud deployments in part threaten those service revenue streams.

Modest Capabilities of Cloud-Focused Providers: Naturally, as in other areas of supply chain software, there have been a number of WMS startups that focus on Cloud-based solutions. However, in many cases those WMS solutions have offered just modest functionality, only appropriate for smaller, less complex distribution sites, limiting their utility for many companies.

Even as those capabilities in some cases are evolving over time, these vendors generally lack real proof points for more advanced DC operations running on their Cloud platforms.

Concerns about Systems Response Times: A Warehouse Management System is different than most other supply chain applications in the need for constant, real-time communications. Delays of even just one or two seconds can cause real issues in areas such as RF or Voice communications, or cartons moving on conveyor systems.

The perception, encouraged at times from the largest WMS providers, is that Cloud-based systems are likely to result in such communication delays and lead to operational problems.

Such concerns are certainly reasonable, especially when providers well-known to many companies echo support that there may be some issues.

However, today those concerns are not material for the vast majority of companies, as we'll explore in the next section, and deployment options can ensure the response times needed for any operation.



Lack of IT Resources: Even though the technical set up and application delivery for WMS in the Cloud is generally orders of magnitude easier than for traditional deployments, IT resources, always in short supply, are still often required to perform the functional set up and configuration of the WMS. This has in some cases served as a barrier to gaining more operational control for some smaller and medium sized operations that could benefit from a “lite” approach to WMS, but where the lack of IT resources in the end preclude implementing even a Cloud-based WMS.

Together, these barriers have unquestionably slowed the market progress of WMS in the Cloud, in comparison to other areas of supply chain software and in terms of adoption rates versus fit/need in the market.

Cloud WMS Deployments are Now Mainstream at Softeon

Unlike many providers, true Cloud WMS deployments are now commonplace at Softeon, and in 2018 represented about two-thirds of all of our implementations.

Softeon, in fact, has several advantages in delivering Cloud WMS. Those include:

Native Web Architecture: Softeon’s industry-leading WMS solution – and indeed, its entire solution platform - has been web-native since its inception in 2000, while other Warehouse Management providers are still struggling to develop Cloud-ready systems.

Softeon will Use a Local Server and Task-Specific “Agents” To Enhance Time-Sensitive Processing Times, if Needed





Softeon's WMS has for more than a decade supported parallel computer processing and multi-tenancy deployments, as desired.

Single Product for Cloud and On-Premise: Softeon has a single WMS solution that works on-premise or in the Cloud. In fact, companies can move from say on premise to Cloud with zero data migration issues – and indeed a number of our traditional on-premise WMS clients have done exactly that to benefit from the lower administrative costs from a Cloud solution.

Approach to RF/Mobile Devices: With web-native roots, Softeon has always used a web-based (HTML) approach to RF/mobile communications, different than the terminal emulation (TE) technology used by most WMS vendors.

Use of HTML provides much greater ability to optimize wireless performance versus TE, very important in Cloud deployments. The Softeon system is able to compress data packets and send only the specific data needed back and forth from the Cloud, not possible with TE, and an approach that can substantially improve RF performance.

The Softeon WMS also uses a variety of server-side techniques to optimize communications between the Cloud and local clients at the DC.

The HTML approach to mobile devices also means Softeon has out-of-the-box support for the new generation of terminals and smart phones based on the Android operating system, again not possible with terminal emulation.

Local Processor for Time-Sensitive Processes if Needed: Softeon has creatively developed one option for especially time-sensitive processes, such as material handling interfaces

or label printing, in the rare cases where bandwidth to the DC may be too limited to support consistent sub-second response times.

As shown in the graphic on page 5, this involves placing a local computer in the DC that runs one or more "agents" – software components that have one and only one job to perform and can do some of that work locally.

An example would be a material handling agent that takes the request from the conveyor system, validates and processes the request, and then makes a database call to the Cloud server to request the required information, such as a divert lane. The use of this agent-based approach, when needed, will deliver the rapid response times such scenarios require – a technology solution unique to Softeon.

Templatized Configuration Tools

Softeon WMS Cloud goes even further to make deployment easy. It comes with a series of templates by industry sector that guide system configuration. A food company, for example, will certainly need batch and expiration date tracking, whereas an apparel retailer probably will not. There are dozens of other such examples.

Softeon WMS Cloud allows users to select a starting template, and then walks them through system configuration in a step by step fashion (i.e., wizards), keeping track of what areas have been completed and which have not. Of course, if configuration is needed in an area not included in the template for whatever reason, users can easily go outside the template flow to add those configuration settings.

The goal is to allow business users to be self-sufficient in system set-up and configuration,

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at least for small to medium complexity operations, without the need for scarce IT resources. The Softeon Configuration Wizard is also ideal for multi-site roll-outs and 3PLs on-boarding new clients.

Overcoming the Cloud WMS Barriers

As we hope has been made clear in this white paper, there have been some real and perceived barriers to adoption of WMS solutions in the Cloud, despite the clear benefits of Cloud deployment for many companies.

The table on the next page illustrates the barriers to Cloud WMS identified at the beginning of this document, and how Softeon’s WMS Cloud solution well addresses each of these obstacles.

The advantages of Cloud WMS deployment are clear. While Softeon will gladly accommodate traditional deployments as well, our ability to overcome obstacles and objections to WMS in the Cloud opens up a new path for distribution companies across the globe.

WMS Cloud in Action

Softeon is the clear leader in Cloud WMS architecture and deployments.

As mentioned earlier in this paper, in 2018 about two-thirds of Softeon’s WMS deployments were Cloud-based. In addition, nearly all of those Cloud customers opted for a subscription model in terms of payment, rather than the traditional upfront license model.

Here are some examples of Softeon Cloud WMS successes.

DB Schenker, one of the largest 3PLs in the world is deploying Softeon’s Cloud WMS across the globe, using its power to achieve rapid implementations and deploy just the right capabilities to meet the needs of its clients across multiple industry sectors by using just the functional components need for each engagement.

Noting how powerful the Softeon WMS Cloud is, Michael Brandes, Senior Vice President of DB

Overcoming Cloud WMS Barriers

Barrier	Softeon Solution
Largest WMS providers not pushing Cloud-based solutions.	Softeon offers equal to or greater than WMS functionality, and fully supports Cloud or traditional deployments.
Existing Cloud-based WMS solutions have limited functionality	Softeon’s unique approach enables Cloud WMS for DCs of modest complexity and needs all the way to a powerful, full-blown WMS, all in a single solution.
Concerns about response times	These concerns are often not in sync with the reality, but Softeon has optimized data traffic in its WMS Cloud, and can add local “agents” as needed to meet response time requirements.
Lack of IT resources to support smaller facilities	Softeon’s unique template-based approach is designed to enable operations personnel to be self-sufficient.



Schenker Logistics said that “With the launch of this IT service, a WMS implementation has less time-to-market than the procurement of a scanner. For small and mid-size businesses with basic requirements, we are now able to configure the WMS in days to match our customer’s requirements.”

Leading jewelry retailer Alex & Ani is powering both traditional store replenishment and e-commerce fulfillment using Softeon Cloud WMS.

Fast growing consumer products distributor The Honest Company went live in 2017 with Softeon Cloud WMS in a new highly automated distribution center, with outstanding performance in terms of materials handling system integration and response times.

3PL company Saddlecreek Logistics is running a combination of some Cloud-based and some traditional Softeon WMS deployments – using of course one single product for either deployment model.

A growing number of companies in the beverage distribution business are using Softeon WMS in the Cloud. For example, Hensley Beverage Company in Arizona is running not only Softeon WMS Cloud but also our Voice solution on regular smart phones, without the need for any other third party software.

These are just a few examples of the many companies that have or plan to move their WMS systems into the Cloud, from smaller sites all the way up to the most complex distribution centers.

Want more examples? Just ask, we will be happy to share more Cloud WMS successes.

Lessons Learned from Cloud WMS Deployments

After a significant number of Cloud-WMS deployments, Softeon has gained the following insights that may be valuable for potential users:

Concerns about response times for RF, materials handling, etc. are very overblown, at least with a system architected the way Softeon WMS is. We have seen almost no issues.

That said, simulation prior to go live is recommended to achieve certainty. Softeon has developed a simulation tool that allows us, for example, to measure response times coming from the Cloud for message requests from material handling systems to gauge performance.

We also observe that even when multi-tenant deployment offerings are available, nearly all companies prefer a private Cloud deployment.

The deployment benefits are real. We estimate that implementation times for Cloud deployments are 25-30% faster than for comparable on-premise deployments, reducing costs and accelerating time to value.

Flexibility in Cloud hosting is important. Some retail and even 3PL companies, for example, do not want use of Amazon’s Cloud platform for competitive reasons. Because of that market reaction, unlike many other software providers Softeon can offer a choice between Amazon or Microsoft’s Azure Cloud platform.

Internal IT resources needed for deployment and on-going system WMS maintenance are reduced dramatically with Cloud implementations, on the maintenance side down to almost no requirements in many cases.

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Along the same line, companies are pleased with how easy it is to set up test or development instances of the WMS versus the effort often seen to do so with traditional internal deployments.

For a variety of reasons, some companies with multiple sites – for now at least – will opt for a hybrid approach, with most sites in the Cloud but some being deployed on-premise.

If the path is made easy and attractive, many companies will in fact move existing on-premise WMS deployments to a Cloud-based system.

Summing It Up

Cloud-based supply chain solutions are rapidly gaining share, and will likely prove the dominant approach in just a few years.

In fact, Softeon and its customers have enjoyed significant success with Cloud WMS, with the majority of 2018 deployments in the Cloud across a wide range of vertical industries, from retail to consumer goods to manufacturing, third-party logistics and more.

That said, as discussed early in this report there are a variety of options across deployment, pricing

and management models for WMS – be sure to understand those options, and how different vendors under consideration can support them.

Warehouse Management Systems have been slow to the Cloud game for a variety of reasons, some legitimate, some more perception, impacted in part by the fact that the largest players have not aggressively pushed Cloud-based solutions, if at all.

Softeon has simply overcome the challenges of Cloud-based WMS deployment, with a unique and innovative solution that can easily scale from the most basic warehouse to the most complex DC, delivering just the right functionality needed to successfully manage each facility, and add to or adjust those capabilities over time.

Combined with the numerous ways Softeon has taken to optimizing system performance in the Cloud, and companies can achieve a total WMS solution that is simply not matched in the marketplace today.

Softeon delivers one robust WMS solution, in the Cloud, on-premise, or in any combination, tailored to the unique needs and resources of each company and facility. We would love to show you how.



About Softeon

Softeon is a global provider of supply chain solutions from planning through execution that delivers supply chain success for its customers – every time. Our modern platform is engineered to reduce complex problems into simple solutions for a faster time to market and lower cost of ownership. Users can implement solutions incrementally to solve a specific challenge or deploy an integrated system. Configurable modules and rules-based solutions give market leaders the business agility they need to get ahead and stay ahead. Companies choose the flexibility and ease-of-use of the Softeon platform to drive higher business value and accelerate ROI. Deployment options include on-premise or in the Cloud.

For more information, please visit www.softeon.com.