

Deployment options for EWM (Extended Warehouse Management) on SAP S/4HANA®

SAP EWM is tuned for the Digital era. What are the deployment options for SAP EWM to provide a multitude of business benefits?

EWM (Extended Warehouse Management) is SAP's strategic answer to the challenges of increasingly complex warehouse operations.

What are the deployment options for EWM with SAP S/4HANA?

Clients can choose between two deployment options broadly. They can select either an embedded EWM solution or a decentralized EWM.

Embedded EWM

With the 1610 release, SAP EWM was offered as an embedded application component. It is

commonly referred to as SAP S/4HANA Supply chain management for Extended Warehouse Management or simply 'Embedded EWM' as the basic warehouse functionality and SAP EWM are running on a common code, embedded within SAP S/4HANA.

This is a default offering as part of SAP S/4HANA 1610. SAP WM (the classical WMS by SAP) also exists as a part of S/4 HANA, but is scheduled to be phased out by 2025.

Embedded EWM has two versions, Companies can choose from. For the purpose of this document, let's call it the **Basic Embedded EWM** and **Advanced Embedded EWM**. Basic Embedded EWM is not only targeted to be a replacement for SAP WM, but also offers additional functionalities. Its key features include Layout and Process oriented Warehouse Management, advanced reporting capabilities and Resource Management.

For additional optimization, companies should opt for Advanced Embedded EWM. The below

illustration shows a quick difference in the two versions. The important point to note is that the Basic Embedded EWM functionality is included in the license cost of SAP S/4HANA. To avail functionalities bundled within the Advanced Embedded EWM, companies need to incur additional license costs.

The key advantages of Embedded EWM are:



Reduced data replication

Business Partner data, Material Master Data, Batch Master Data does not need to be replicated as it exists within SAP S/4HANA itself. CIF (Core Interface) is not required to be used anymore.

Transactional data like Purchase Order data or production order data can be read directly and this eliminates the usage of an Expected Goods Receipt (EGR) Document.

Elimination of the use of additional documents like outbound delivery

Embedded EWM IN SAP S/4 HANA

Basic Embedded EWM

- Functionality with the SAP S/4 HANA License
- Useful for Stock transparency and control
 - Inventory Management
 - Process and Layout Oriented Warehouse Management
 - Graphical Reporting Capabilities
 - Physical Inventory (Dynamic Cycle counting)
 - Internal Warehouse Processes
 - RFID Technology
 - Handling Unit Management
 - Storage Unit Management

Advanced Embedded EWM

- Functionality requiring additional licenses
- Useful for Optimised Warehouse Operations
 - Wave Management
 - Yard Management
 - Value Added Services
 - Cross Docking
 - Kitting and Slotting
 - Warehouse Billing
 - Integration to Material Flow Systems
 - Labour Management

requests, inbound delivery requests and posting change requests.



Solution of the future

This is the strategic tool of SAP and has a well-established product road map, focusing on enhanced product developments and releases. SAP aims to include all functionalities of decentralized EWM in Embedded EWM.

Decentralized EWM

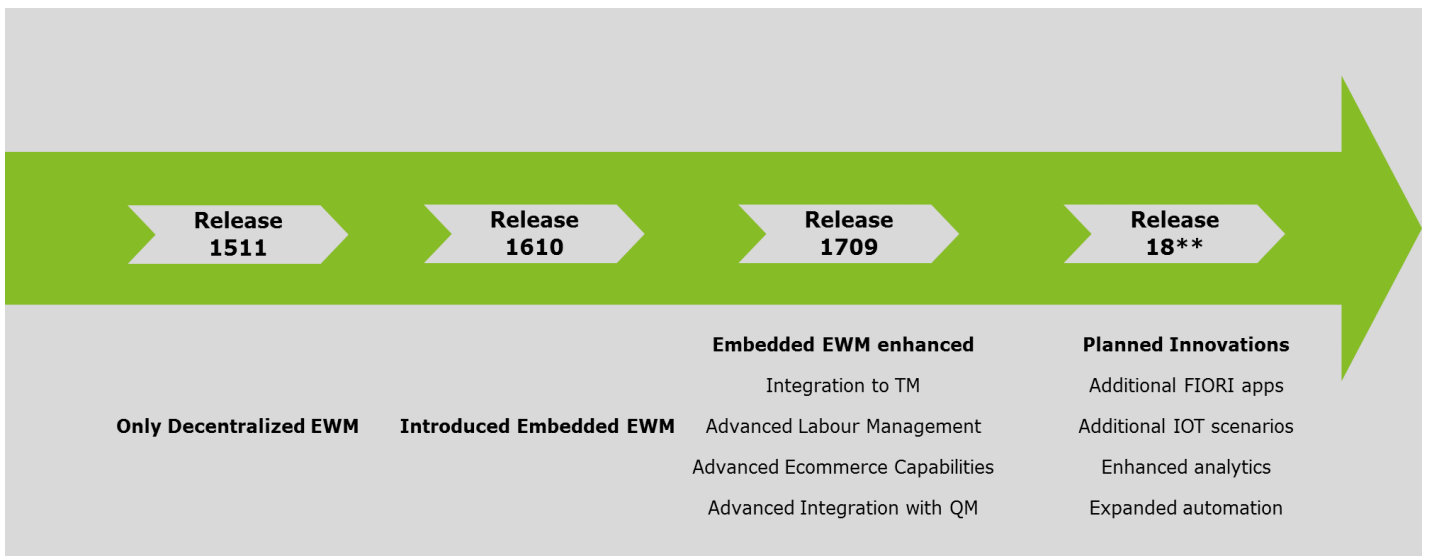
Decentralized EWM is an approach available since the 1511 release of SAP S/4HANA. In this deployment option, SAP EWM is deployed on a separate server platform and connected to SAP S/4 HANA using Remote Function calls and CIF. EWM is a part of the SCM server or is deployed on SAP Netweaver. The key advantages of decentralized EWM are:

- Ability to handle volumes of transactions and multiple warehouses
- Better able to support Material Flow systems
- Can keep running even if the ERP system goes down
- Both systems can be upgraded without impacting each other

What is the future landscape for SAP EWM?

The future of SAP EWM is guided by two principles – including maximum functionality of decentralized EWM in Embedded EWM and Enhancing the EWM core. Since the focus of this article is on Deployment strategies, let’s focus on the first principle.

The next SAP S/4HANA release is aiming at more SAP Fiori® apps, focusing on exchanging warehouse events with IOT applications and adding more functionality to support JIT, KANBAN.



How to decide on a deployment strategy?

SAP S/4HANA gives you the option to have different deployment strategies for different warehouses at the same client. It is technically possible to have some few warehouses running on Embedded EWM, some on LE-WM and others on a decentralized EWM server. This gives clients a flexibility to choose an appropriate deployment option.

Key Questions

- What is the Volume of transactions in all warehouses?
- How many warehouses presently and what is the expansion plan?
- What is the effect on Total Cost of Ownership and Total Cost of Investment?
- What is the current level of warehouse automation? (MFS)
- Consider Warehouse downtime, system upgrades, increased volumes
- Is existing IT infrastructure capable of handling Embedded EWM?

High warehouse throughput and seasonal peaks in warehouse transactions tend to hint towards using a decentralized EWM deployment strategy. A decentralized EWM system is capable of handling a higher volume of transactions and since this is on a different instance, system performance of other processes is not impacted. Other factors like the complexity of enterprise structure also have an impact on the deployment option chosen.

An embedded EWM system can reduce the total cost of ownership as it simplifies the IT landscape. A decentralized system is more suited to support high performing material flow systems and other such automation. Warehouse managers and CIOs should choose a deployment strategy, which fits in

with the level of automation planned.

The downfall of choosing an Embedded EWM strategy is that in case the SAP system is down, the warehouse operations also cannot run. However, with a decentralized deployment, the warehouse operations can be continued even if the ERP system is down. The other upside of a decentralized deployment is that both ERP and EWM can be upgraded independently. If the Embedded EWM option is chosen, companies need to ensure that their existing IT infrastructure can handle it.

How to design a Cloud strategy for EWM?

Traditionally, companies have used an On-Premise deployment strategy for ERP Implementations. On-Premise deployments require significant effort, as companies not only need to invest in IT infrastructure but also invest in designing business processes. SAP has challenged this deployment approach and led innovations with the SAP S/4HANA Cloud. Companies can benefit greatly by deploying their ERP in the cloud. Cloud deployments have significant and quick effect on the bottom line as capital expenditure is reduced. By using the Cloud, companies can leverage on pre-built configurations and industry best practices. Companies can opt for a Cloud versus a Hybrid Cloud. Both are

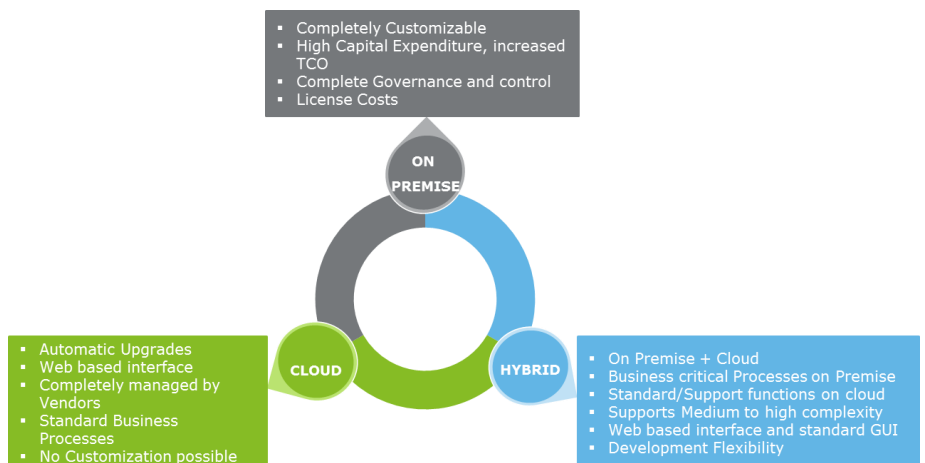
subscription based, but the Hybrid cloud allows more flexibility to have custom developments.

Some key considerations for companies planning the Cloud journey for their Warehouse Management solutions are:

Data security: It is important that the ERP data is secured on the cloud. Personnel Data, Information on Patents etc. cannot be compromised with. Hence, before migrating to the Cloud, it is important to evaluate the risks associated with Data security.

Performance: The complexity and throughput of your warehouse determine if you should foray into the Cloud. A Cloud is a shared platform which may not be the most efficient choice for highly complex operations. Further, the governance is shared with a cloud platform. Performance lapses may not be monitored as closely as on an On-Premise deployment.

Customizations: Deployments on Cloud restrict the amount of customizations. This makes the solution more efficient and rich with Industry best practices, but reduces the flexibility. If your warehouse has specific processes which you have mastered over a period of time, an On-Premise strategy is more suited. However, for standard processes, a cloud strategy is beneficial.



Conclusion

With SAP S/4HANA and SAP HANA® Enterprise Cloud, SAP opens a new world of possibilities. Choosing the right deployment strategy is crucial to realize the complete potential of the Digital Core. Companies need to design their deployment strategies by evaluating the complexity of warehouses, warehouse throughput, future automation plans and most importantly, with the vision of digital transformation. The illustration below summarizes the points discussed in this paper.

The deployment strategy decision for EWM should be guided by two fundamentals:

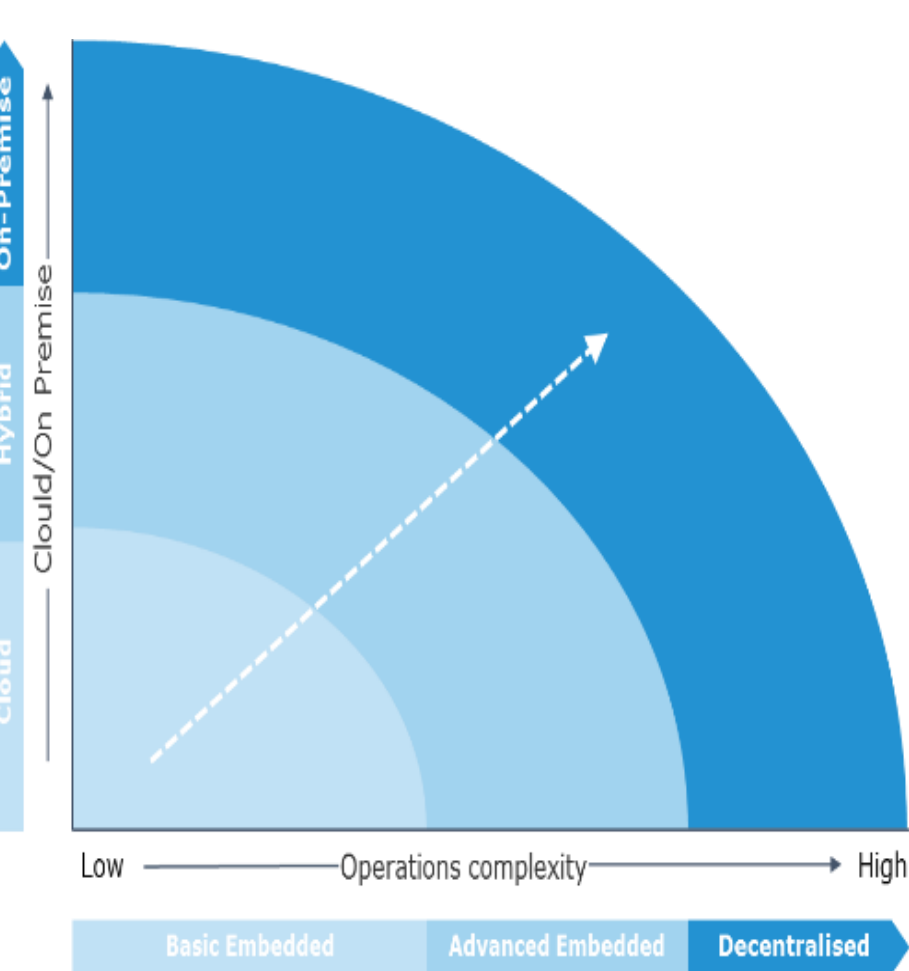
- Cloud approach or no Cloud approach
- Operations complexity

Cloud implementations reduce the total cost of ownership and total cost of investment by significantly simplifying the IT landscape. However, it is critical to combine both, technology and business trends. Business trends like changing business models, patented processes built over time, core competencies may restrict the use of the Cloud. Warehouses having standard processes and requiring only stock control, can be hosted on the cloud and choose Basic Embedded EWM. As the complexity of warehouse operations increase, the option of hosting EWM on the public cloud becomes less viable as complex warehouses usually need a lot of customization, quicker response times and constant performance monitoring.

How can Deloitte help?

With its technical expertise, business process knowledge and global network, Deloitte is capable of providing solutions for all the challenges you face with rapidly changing technology.

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- Analyze ERP needs and develop a road map to enable you to be 'Digitally' equipped
- Provide Process consulting in all areas of Warehousing
- Help you make better decisions for automating your warehouses
- Consult you on choosing the right EWM deployment strategy for your warehouse
- Assist you with a migration strategy from SAP WM to EWM
- Implement SAP EWM and provide Application Management Services globally
- Analyze and plan your journey to Cloud

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