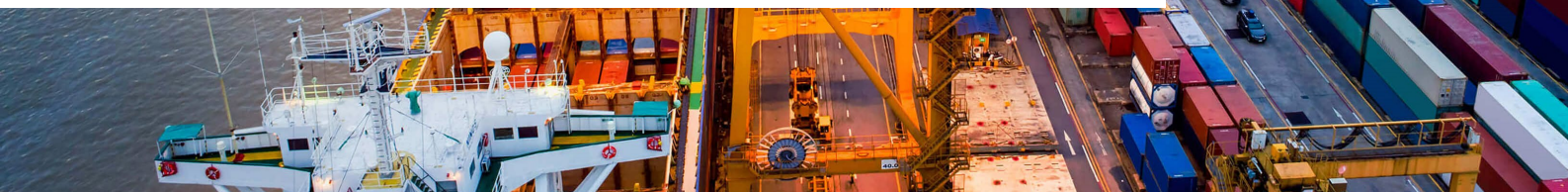
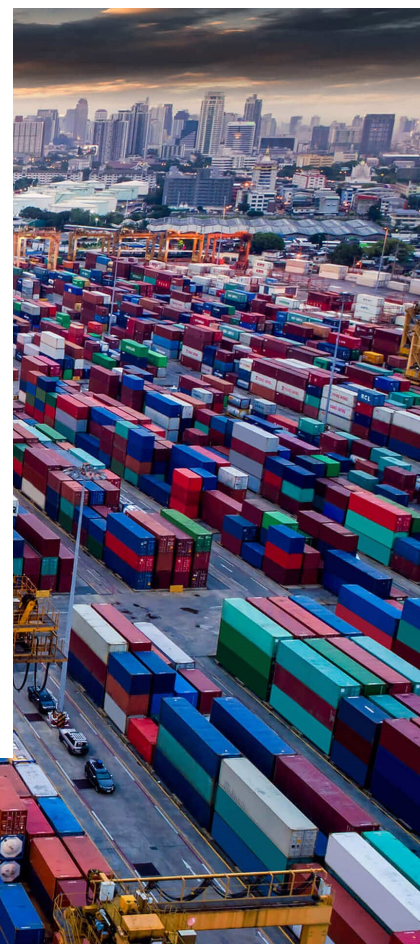
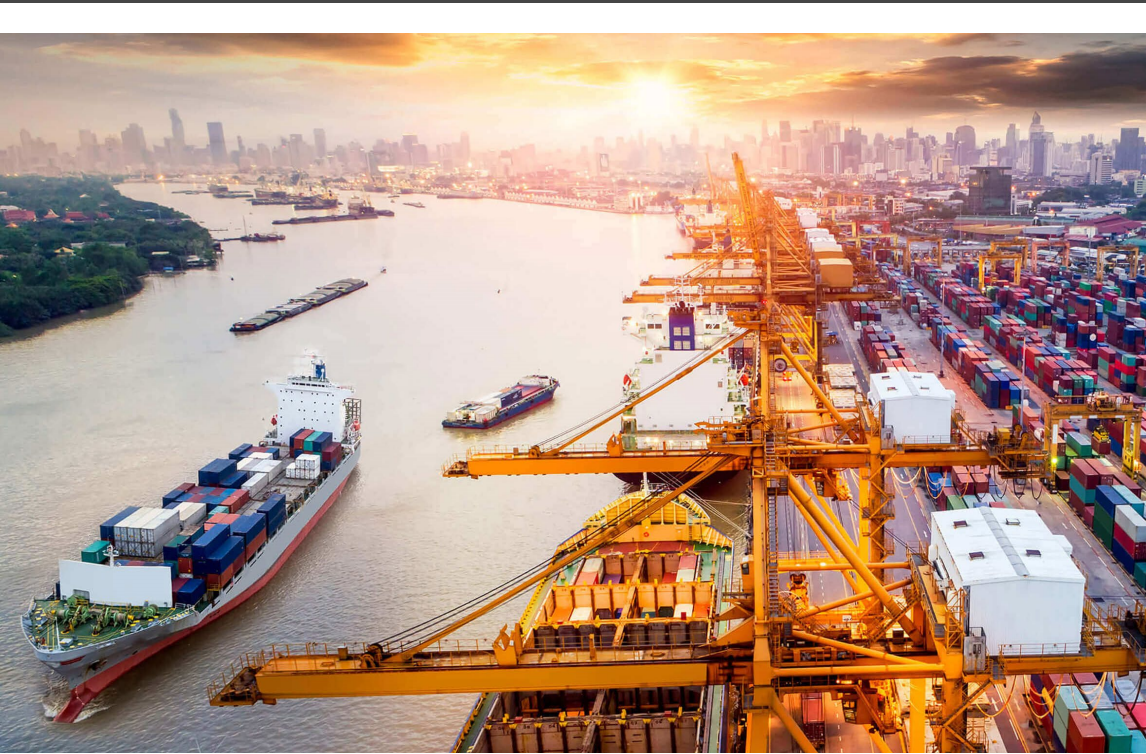


Success factors for your supply chain transformation: SAP EWM on S/4HANA



Facing current challenges with significant impacts for the future

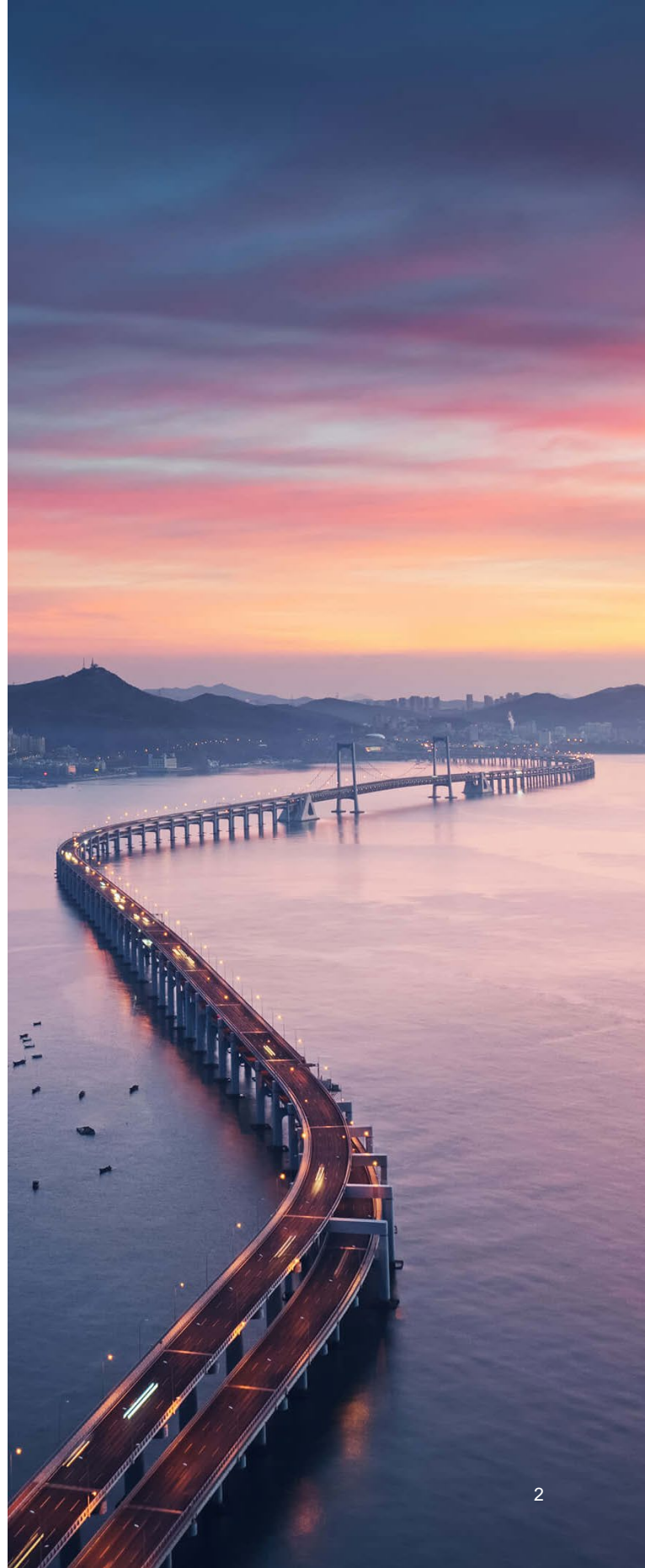
Against the current backdrop of events such as climate change, the Covid-19 pandemic and armed conflict in Europe, companies are facing more challenges than ever before. As already explained in detail in our [Covid-19: SAP consulting perspective](#) white paper, the pandemic pushed many supply chains to the brink, leading to far-reaching economic impacts. Companies were forced to accept losses in order to remain competitive and had to learn from past crises. They are now having to face the question of whether new regulations such as the German Supply Chain Act, which has been in force since March 2021, can help to establish economically, environmentally and socially sustainable supply chains or whether they are more likely to restrict corporate development.


Innovations offer opportunities and risks

In addition to the ongoing need to address legal requirements, there is one challenge today that companies must prioritise in their planning: how to balance global and regional procurement strategies. Global procurement is a cost-effective option due to international competition, but has high rates of failure. A regional strategy, on the other hand, offers more stability while sacrificing the ability to react on an international scale. Converting supply chains from one strategy to the other is expensive, and overall increases in raw material and delivery costs can also put strain on budgets. This can have far-reaching consequences: investments and planned budgets may have to be cut, jeopardising further development.

Supply chains must be built to be future-proof

It is therefore clear that making the right supply chain investments is more important now than ever. Nearly all modern crises have a major impact on supply chains, and so supply chain resilience and stability is increasingly becoming the focus of transformation projects.





How can you successfully transition to S/4HANA throughout your supply chain?

Many companies are currently facing the challenge of having to completely renew their IT infrastructure, and are relying on their enterprise resource planning (ERP) system's market leader to show them the way. SAP, for example, has developed a new server architecture in the shape of S/4HANA, which offers clients innovative and impressive technology across the board. The platform's technical performance enables companies to establish new business models and use them to generate value.

Supply chain management is becoming increasingly important

In view of current events, businesses are now focusing on improving supply chain management (SCM) more than ever before. Prominent areas for recent innovation – such as warehouse management, transport management and delivery, inventory management and order fulfilment – clearly show the importance of smooth interaction between the links in the chain and the significance of each sub-area. SAP has recognised this opportunity, and offers its clients different modules and combinations of modules to meet each client's specific requirements.

Integration as a key factor

Historically, friction and implementation problems have been common at the interfaces between individual business units. The goal should therefore be to make efficient use of the unified and powerful S/4HANA platform and to

minimise risks and problems between modules. At PwC, we believe that this is the only way to solve complex challenges and achieve innovative business results for your entire company.

Limiting complexity for the client

This paper marks the start of our "Success Factors in your Supply Chain Transformation" series, which will take a closer look at selected modules and rate their relevance in the overall context. We'll show why a transition can make sense, and highlight the mistakes to avoid before and during a transformation. Can complexity still be justified when transitioning to S/4HANA or implementing it from scratch? Building on our proven [smart greenfield approach](#) and our knowledge of [value-driven conversion to S/4HANA](#), we want to offer our clients further input on successfully transitioning to the SAP environment. Starting with Extended Warehouse Management (EWM), we want to break with complexity and inspire change. This white paper will particularly focus on the various implementation options and on how to integrate interfaces to make S/4HANA transformations easier and more secure.

Interested in logistics?

Find out more at:
www.pwc.de/en/erp-transformation.html

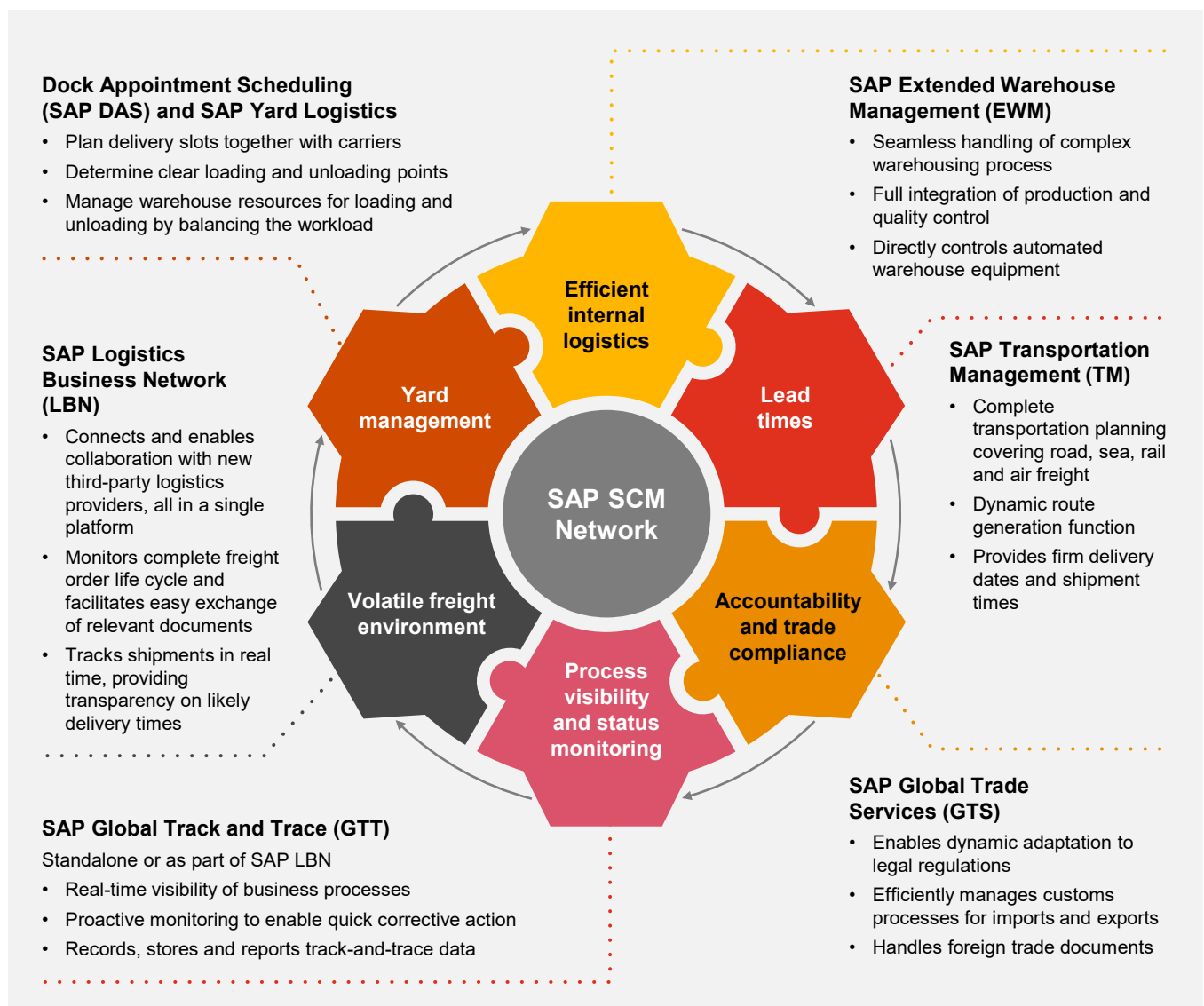
SAP: greater expertise in SCM-related topics

In order to provide its clients with high-performance supply chains, SAP has restructured its SCM suite and now offers various modules to meet client requirements in all areas of logistics. In addition to purely logistical modules such as Extended Warehouse Management (EWM), Dock Appointment Scheduling (DAS), Transportation Management (TM) and Global Trade Services (GTS), integration modules are also available, such as Global Track and Trace (GTT) and the comprehensive Logistics Business Network (LBN). The focus here is on integrating the modules into your systems: the modules will

work as standalone systems, but this is not what they are designed to do.

Full integration into the SAP SCM Network

Good communication between the different modules is vital for a functional and resilient supply chain. As a result, SAP has also introduced Cloud Connector and the Business Technology Platform (BTP), which provide cloud connectivity for individual on-premises systems and therefore enable existing modules to remain in use in many cases. However, SAP is clearly aiming for cloud-based solutions.





Efficient logistics: success factor for a successful transition

Across every industry, current events have shown supply chain resilience can have a significant effect on a company's success. It isn't just external factors that can have severe and unexpected impacts on companies – crises also reveal internal weaknesses. Together with our partners, we at PwC help organisations to improve their internal processes and interfaces to create more resilient supply chains – all with the end goal of enabling companies to reliably deal with crises and ensure corporate success. This also includes an important building block of the supply chain: warehouse management. And to support this process, internal warehouse management systems can be mapped in their entirety with the help of SAP Extended Warehouse Management (EWM).

Enhancing warehousing solutions

SAP's EWM software product offers flexible, automated support for handling all goods movements and managing stock in a warehouse complex. The system assists with scheduled and efficient flows in all logistical processes, both within the warehouse and at the interfaces to the broader supply chain network. As the successor to Warehouse Management (WM), EWM has been considered one of the most modern and complex warehouse management systems on the market since its introduction in 2005.

SAP has announced that WM will be phased out by 2027. For companies that have not yet

decided to transform their internal logistics modules to S/4HANA but are running out of time to move away from WM, SAP offers Stock Room Management (SRM) as an interim solution. SRM covers basic warehouse management features for small and simple warehouses currently running on WM. It reuses major parts of WM and can be used beyond 2027. Nevertheless, SRM is not in line with SAP's warehousing product strategy for the future, and should therefore only be considered as an interim solution.

Shift decision-making to process owners

EWM offers real-time analysis and reporting for all warehouse processes via the warehouse management monitor and the warehouse cockpit. Resources can be associated with people or equipment, such as forklifts, to build a comprehensive work management system. Throughput times and internal warehouse KPIs can also be determined for a given resource, which can be helpful for optimising individual warehouse processes. These processes can be defined when customising the solution during the planning phase of an optimisation project or during ongoing operations, and should therefore help to transfer decision-making from the employees to the process owners. Almost all settings can be individually adapted to new or existing warehouse structures. In order to keep the complexity of introducing EWM as low as possible, PwC offers numerous approaches to ensure a successful transformation.

SAP EWM: catalyst for sustainable warehouse management

There are various options for integrating EWM into your IT ecosystem. First, like all HANA products, the warehouse management system can be used as an on-premises or cloud-based solution. Traditionally, EWM is implemented as a decentralised solution to supplement SAP ERP. Both systems can draw on the performance of the HANA database, but work independently and communicate with each other or with other modules via interfaces. Nowadays, however, EWM is often implemented as an embedded solution, meaning that EWM and ERP work together on one platform. This eliminates the traditional SAP Core Interface (CIF) and allows master data on items such as materials, customers or suppliers to be read directly from the S/4HANA database. Replication of various data – which can lead to inconsistencies – is also no longer necessary.

Scoping the necessary features

In addition to deciding which platform to use, users of embedded S/4HANA solutions can also choose between the Basic and the Advanced version of EWM. The Basic version is included in the S/4HANA Core licence, and supports standard processes for warehouse structure and warehouse management along with other processes such as inventory management, resource management and production

integration. The Advanced version of EWM covers the full scope of internal and external logistics processes, along with yard management functions. EWM Advanced also offers integrated material flow control, which aims to synchronise all flows of information and goods so that the right number of products is available in the right place, at the right time and at the right standards of quality.

Fiori: a roadmap to individualised apps

EWM simplifies the integration of programmable logic controllers (PLCs) and RFID technology. Picking technology, in the form of RF handheld devices or pick-by-voice technology, can be directly integrated into EWM via SAP's Internet Transaction Server (ITS). ITS supports barcode and voice scanning without the need for middleware, and allows HTML templates with graphical or language-specific tags to be created that can be read using a web browser. Release 9.4 also saw the development of Fiori apps that are seamlessly integrated with EWM processes. This allows inbound and outbound deliveries to be controlled and monitored via different Fiori apps. A special app is also available for processing goods receipts from customer returns and managing inbound processes.

EWM capabilities

Inbound Logistics		Efficient Warehousing		Global Distribution	
✓ Goods Receipt	✓ Bin Replenishment	✓ Barcoding and RFID	✓ Outbound Delivery		
✓ Production Receipts	✓ RF Integration	✓ Kitting	✓ Production Material Staging		
✓ Quality Inspection	✓ Labor Management	✓ Value Added Services	✓ Vendor Returns Processing		
✓ Customer Returns	✓ 3PL Integration	✓ Carbonization	✓ Cross Docking		
✓ Automated Putaway	✓ Physical Inventory & Cycle Counting	✓ Dock Appointment and Scheduling	✓ Yard Management		

Master data	Inbound process	Internal process	Outbound process	Reporting
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Breaking down the myth of complexity: deployment options

Deployment options are not an issue with traditional modules, as these all fall under SAP's Enterprise Architecture. EWM, by contrast, offers multiple deployment options and is built on the SCM architecture, having a separate communication channel to exchange data with ERP. The CIF tool was originally developed by SAP to transfer master data and transaction data from ERP to Advanced Planning and Optimization (APO). As EWM is based on SCM, it reuses this same tool, but only for transferring master data. CIF can transfer transaction data only if it is used with an APO system. As a result, EWM instead uses the queued Remote Functional Connection (RFC) to transfer transaction data from ERP to EWM. This is a one-way queue, i.e. there is no way of transferring master data from EWM to ERP.

SAP offers three main deployment options

Selecting the most suitable deployment option is very important. This selection should be made based on the complexity of your business and the functions you need. On a meta level, SAP offers three main deployment options via SAP RISE: on-premises, public cloud and private cloud.




On-premises

On-premises implementations of EWM are modelled on a traditional R/3 implementation, where the SAP system is installed and maintained on the client's server. Annual SAP upgrades need to be handled by the local IT team. This option is aimed at clients with mature business processes who need a full range of features and high levels of freedom to customise. There are four different instances available for on-premises implementations:

1. Embedded Basic – for stock transparency and control
2. Embedded Advanced – for optimised warehouse operations
3. Standalone – EWM 9.x (to be phased out by 2027) – for large and complex warehouse operations
4. Standalone – S/4HANA – solution for challenging warehouses in line with SAP's vision for the future

However, RISE with SAP also supports the new and preferred paradigm of cloud-based SAP solutions, and provides you with all the tools you need to make this transition. The options and benefits of private and public cloud systems are presented below and on the next page.

EWM deployment options

	 S/4 on-premises	 S/4 Cloud, public edition	 S/4 Cloud, private edition
Application (Data, application)	Client	SAP	SAP
Platform (Operating system, database, middleware)	Client	SAP	SAP
Infrastructure (Server, storage, networking)	Client	SAP	SAP/upscaler (Azure, GCP, AWS)

Bringing digital warehousing and management to the cloud

Public cloud

When using this delivery variant, SAP handles the software, hardware and middleware, as well as enterprise support, where updates are automatically installed every quarter or every six months depending on the subscription options. This option is a software-as-a-service (SaaS) solution, accessed via your browser, and is aimed at clients looking for a lightweight and flexible warehouse solution that can be scaled up with their business. The entire cloud platform is owned by SAP and it comes preconfigured with all SAP core best practices; however, this leaves less room for custom development. There are two options for public cloud deployment:

- Single-tenant – software instance, infrastructure and database serve only one client
- Multi-tenant – software instance, infrastructure and database serve multiple clients

Private cloud

Supply chain solutions such as SAP EWM can also be implemented in a private cloud environment. The private cloud edition of S/4, unlike its public cloud counterpart, provides a full range of features similar to on-premises solutions, allowing some flexibility to undertake your own enhancements and customisations.

This is SAP's response to the call for a customisable solution, as many companies have individual requirements and business processes and will need to retain them in the future. At the same time, this also enables cloud-based implementation of enterprise systems, which SAP is increasingly focusing on, and offers advantages in terms of scalability and maintenance. Clients looking for features and functions comparable to an on-premises system are well advised to use private cloud edition of S/4.

Comparison of deployment options

	On-premises	Public cloud	Private cloud
Complexity	High	Low	Medium
Ownership cost	High	Low	Medium
Licensing model	Traditional	Subscription	Traditional or subscription
Solution ownership	Local	Vendor	Shared
User interface	Web user interface and SAP user interface	Web user interface	Web user interface
Features	Full range	Limited range	Full range
Potential for client customisation	Maximum	Low	Medium
Updates	Annual	Half-yearly (single-tenant) Quarterly (multi-tenant)	Annual

PwC's Industry Edge: quickly and simply integrating SAP EWM into your digital supply chain



Spotlight: Industry Edge @PwC

Turbocharge and customise your S/4HANA implementation

Industry Edge is a preconfigured, customised version of S/4HANA that's designed specifically for your industry, saving you time in implementation and accelerating the return on your investment in SAP.

Accelerate and achieve positive ROI with PwC's Industry Edge

SAP S/4HANA offers many benefits to organisations looking to improve business outcomes. But in an era of constant change, few enterprises can afford to spend the time and the money necessary to implement and customise S/4HANA from scratch.

PwC's Industry Edge helps you accelerate your S/4HANA implementation or migration and achieve positive ROI. Our preconfigured solutions are customised to suit your industry, giving you access to the leading practices, processes and standards that are crucial to the future success of your enterprise.

100+

configuration documents

500+

business process flows

Up to **40%**

faster deployment of S/4HANA

More than
800 unit

test cases

More than

300

preconfigured business scenarios

Over **90**

training courses, plus

150

design workshop presentations

Interested in rapid solutioning?

More information about Industry Edge @PwC at:

www.pwc.com/us/en/services/alliances/sap-implementation/industry-edge.html



Driving your supply chain transformation

Digital supply chains will continue to become more important over time, as they are increasingly taking on a key role in addressing problems in today's changing world and they help make companies more competitive for the future. SAP's EWM module for internal warehouse management, in particular, can play a critical role in creating a resilient supply chain, as it not only serves as an interface between other modules, but also delivers a properly structured warehousing solution – an essential building block for a company to meet the requirements of its production processes, deliver its products to customers and provide good customer service.

Are you a company on the verge of a future with S/4HANA? We can be your one-stop shop to help work out solutions to simplify the changeover that cover both technology and strategy.

We drive identification of the right improvements. Our design repository and Industry Edge reference systems accelerate planning, while agile implementation of urgent improvements enables a rapid shell conversion.

Based on state-of-the-art technologies, we at PwC offer consulting services in close coordination with SAP to create the best possible basis for your projects. We guide our clients using our expertise in technology and management consulting, supporting your digital business transformation.

We at PwC use goal-oriented success factors to guide digital supply chain transformation projects: the perfect blend of a proven and structured approach, best-in-class management skills, and intelligent and future-proof technology.



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PwC. More than 13,000 dedicated people at 21 locations. €2.61 billion in turnover. The leading auditing and consulting firm in Germany.

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