SAP S/4HANA for Digital Supply Chain and Manufacturing
Overview

Supply chain and manufacturing are not the first lines of business that come to mind when thinking about enterprise software. Yet throughout their history, these business areas have been at the forefront of enterprise software innovation.

For example, when material requirement planning (MRP) software first emerged during the mainframe era, it was regarded as a radical departure from the way things are done. However, supply chain and manufacturing executives quickly adopted this new concept to reap significant economic and productivity benefits. MRP became the foundation of many business processes and evolved in scope and functionality, eventually giving birth to today’s ERP systems.

But a lot has changed since the initial introduction of ERP. Nowadays, corporations are running complex supply chains and dealing with heightened customer expectations for personalized products and services – which begs the question: Can traditional ERP systems keep up with the pace of these changes and the challenges they bring?

This report highlights ways in which today’s business environment has outgrown the supply chain and manufacturing capabilities of traditional ERP systems and how SAP S/4HANA meets these new demands with a range of advanced functionality for production planning, warehouse management, order promising and more, ushering in a new era of Digitized Supply Chains that are immediate, intelligent and connected.
Connecting All Parts of the Supply Chain

The supply chain has traditionally revolved around enterprises’ core ERP systems, supported by siloed applications that provide additional, more advanced functionality around transportation management, production planning, or warehouse management, for example.

This approach served manufacturers well for years, but with today’s market trends – from e-commerce and omnichannel upending retail to technology innovations such as robotics, smart products, and intelligent machines – it’s no longer sufficient. In-memory computing and modern cloud architectures have eliminated the technical constraints of the past that necessitated this siloed approach and opened the door to a new suite of integrated in-memory enterprise applications.

With the 1610 release of SAP S/4HANA, companies now have access to a modular suite of integrated solutions that include advanced supply chain capabilities that used to require separate, disparate installations. This simplified landscape allows new companies to explore brand-new functionality, and helps long-standing manufacturers gain the flexibility and visibility needed to take advantage of use cases that were previously out of reach.

The articles in this special report provide an in-depth analysis of some key new innovations delivered with the 1610 release of SAP S/4HANA in the areas of warehouse management, production planning, and order promising, all of which are critical for supply chain and manufacturing executives looking to digitize their supply chains. Taken alone, these innovations are a leap forward in the journey toward digitization. However, when incorporated as part of a landscape that includes an SAP S/4HANA digital core working together with other digital supply chain solutions and related offerings – such as SAP Leonardo, SAP Integrated Business Planning, SAP Ariba, and SAP Hybris – the benefits are magnified. By deploying SAP S/4HANA along-side these solutions, companies can achieve faster, more accurate planning cycles, dynamic sourcing and procurement processes, and a simplified logistics data model that enables an omni-channel strategy, ensuring a competitive advantage in an increasingly crowded marketplace. Let’s look at some examples of how these solutions can work together to enable a digital supply chain.
SYNCHRONIZING DEMAND PLANNING WITH FULFILLMENT EXECUTION

SAP S/4HANA leverages a single logistics data model across manufacturing, inventory, sales, and the material ledger – an innovation that simplifies data consumption and enables better integration. Incoming sales order and financial data in SAP S/4HANA can be seamlessly rolled up into SAP Integrated Business Planning, which improves planning, forecasting, and what-if simulation analysis. This simpler setup eliminates the complicated integrations across siloed solutions required in the past, and users no longer have to struggle with spreadsheets and batch processing to get the information they need.

Downstream material requirements planning (MRP), production planning, and order fulfillment are also improved in SAP S/4HANA, because the close integration with SAP Integrated Business Planning allows forecast plans for sales and operations planning (S&OP) and demand planning to be used downstream. This reduces the time between receiving a customer order and making a final delivery, and frees up resources to better respond to sudden shifts in customer demand.

ENHANCING DIGITAL SUPPLY CHAIN VISIBILITY WITH THE INTERNET OF THINGS

The Internet of Things (IoT) is a major technological breakthrough in the supply chain space, providing real-time data around everything from machine part wear and tear to package tracking and weather conditions. SAP Leonardo is SAP’s IoT strategy and solution portfolio that integrates into the SAP S/4HANA value chain.
from engineering to delivery, providing companies with data across devices, applications, and assets as well as the vision to act on it.

SAP Leonardo working together with SAP S/4HANA tracks everything from cold-chain condition tracking – temperature points along critical points in the supply chain for perishable goods, such as ice cream or vegetables – to detailed component traceability, so life sciences companies can carefully monitor all elements of the supply chain to avoid contamination of a pharmaceutical or chemical. This functionality also helps logistics organizations track packages and delivery processes, benefits they can then extend to their customers with end-to-end visibility.

In addition to tracking processes, SAP Leonardo allows companies to monitor their IoT-connected devices by making digital twins of machines developed for manufacturing use. By embedding sensors, companies can re-create in the solution a visual image of each asset and properly monitor its state and condition in real time to determine if it needs maintenance or is over capacity, for example. In many cases, the digital twin will have a longer lifespan than its physical counterpart, enabling companies to not only perform preventive maintenance and optimize use of the asset, but also understand how future assets can be improved. This is an important benefit for manufacturers that have changed from operating as machine providers to becoming service providers – if they can innovate machines that they sell to customers as a service, they can gain greater efficiencies and revenue by running these machines optimally.

PROVIDING REAL-TIME FORECAST CHANGES TO SUPPLIERS

Speed is critical to establishing a stable and fast supply chain. Traditionally, supply chain changes – particularly around suppliers – have involved manual communication that is too slow and error prone, affecting the ability to respond to demand fluctuation. By deploying SAP S/4HANA together with Ariba Network, back-end systems are connected directly to the digital systems of supply chain partners, allowing enterprises to quickly react to market disruptions in real time. If a new product launch is seeing unexpectedly high demand, for example, suppliers can learn this more quickly through manufacturers and retailers and adjust their production schedule to meet the new forecasted demand.

Integration between Ariba Network and SAP S/4HANA also benefits members of the finance team, including treasury and accounts payable, through dynamic discounting. Ariba Network allows these users to have real-time views into the payment terms and supplier contracts throughout their supply chain network, enabling them to identify situations where early payment could provide discounts to the company, whether they are using their own funds or the capabilities provided within SAP Ariba Financial Supply Chain. Dynamic discounting capitalizes on real-time information to improve the visibility of the finance organization and give a short-term benefit to working capital and liquidity.
BRINGING OMNICHANNEL TO RETAIL AND CPG COMPANIES

When it comes to retail and consumer packaged goods (CPG), it's not enough to consider only the individual parts of a company's internal supply chain. In today’s competitive marketplace, customers have more power than ever, and it’s essential that companies have a complete view to deliver the best service at every touchpoint on every channel. SAP S/4HANA and SAP Hybris solutions together can provide the functionality required to do just that, providing employees from across the organization – whether in sales, finance, customer service, or in the warehouse – to have the information they need at their fingertips.

SAP Hybris Marketing Cloud leverages customer data from SAP S/4HANA to help marketers better segment and target their audience. The solution captures leads during a campaign and shares that data with SAP Hybris Cloud for Sales so salespeople can follow up on the leads using the complete set of customer data from SAP S/4HANA. The same principle is true for customers placing orders: Data from SAP S/4HANA is immediately available within order management and warehouse management components, making for better shipping and billing processes.

DIGITIZING THE SUPPLY CHAIN

The supply chain and manufacturing are under increasing pressure to deliver faster, better, and smarter to keep up with new market and technology trends. By using SAP S/4HANA with SAP’s digital supply chain solutions, companies can better leverage their data to tackle today’s most difficult business challenges and harness technological innovations. Due to the in-memory computing power of SAP HANA and the simplified data model of SAP S/4HANA, technical capabilities throughout the supply chain are more easily available to companies than ever before. And with the delivery of the 1610 release of SAP S/4HANA, advanced supply chain and manufacturing solutions are being integrated back into the core, eliminating complex integration layers that reduce insights and hamper productivity. This report will explain in more detail how these solutions enable new use cases and improve the effectiveness of supply chain operations for the digital age.
**Boosting Warehouse Management Operations**

The supply chain is undergoing massive change due to digitization, with faster planning, production, and delivery combining with higher expectations from customers to change how goods are produced, packaged, and shipped at companies around the world. And while there has been much focus around new ways of developing products and reducing shipping times, one area that must not be left behind is the warehouse.

A key part of an end-to-end logistics process, warehouse management involves managing the operations of the warehouse – where goods are stored, how they are transported from one location to the next, and how vehicles involved in shipping and delivery maneuver around the facility. Consider the effects on the supply chain – and the business as a whole – for a company that focuses its technological resources on other components of the business and not the warehouse.

This way of thinking ignores four key drivers of the digital supply chain: the customer experience, individualized products, the networked economy, and resource scarcity (see sidebar). These trends are causing an upheaval in how the supply chain performs, and to address them all, organizations need to make sure that their warehouse management functionality is up to date. This is why SAP brought its extended warehouse management to SAP S/4HANA to be part of the digital core, providing the real-time insight and analysis manufacturers need to maximize the efficiency of their warehouses, cut down on wasted costs and errors, boost customer satisfaction and profitability, and better integrate warehouse management into the end-to-end logistics process. Let’s take a closer look at these features and how they help organizations better integrate warehouse management into the end-to-end logistics process that powers the modern supply chain.

The company might invest in a better finance solution to achieve a faster close and easier insight into its day-to-day financials, but without advanced warehouse functionality, it might not have insight into current inventory levels. The company might invest in a best-of-breed HR solution, but by failing to keep up to date in the warehouse, employee productivity could decline due to workers having to make up for manual error, or employees who don’t trust an unreliable system and don’t use it at all. The same is true for companies that invest in upgrades for parts of their supply chain – setting up advanced business networks or upgrading production processes, for example – but forget about their warehouse, thinking that they can get by with what they have always had.
What’s Driving the Digital Supply Chain?

The move to digitize the supply chain is powered by four main drivers:

1. **Customer experience.** We live in an omnichannel world. Consumers are so used to buying and consuming things easily via the internet that they now have very high expectations. Delivery is expected to be free and fast – and some companies have been reducing delivery lags down to a matter of days or in some locations, a matter of hours. In the race for fast, flawless delivery, logistics and the warehouse cannot be forgotten; a great experience is impossible without them. If an order can be placed easily online, it must be fulfilled and delivered with the same ease.

2. **Individualized products.** Whether it’s automobiles, clothing, or heavy machinery, consumers of all kinds of products expect customization. It’s not enough to provide an excellent buying and delivery experience; the product itself must meet the buyer’s needs exactly. This results in “lot-size-of-one” production and the popularity of kitting or value-added services, where multiple products can be grouped and packaged together. The manufacturer can no longer plan to make thousands of the same product and leave them in the warehouse until they are sold. This also means that the warehouse must be connected to the entire business so it can control and simplify material flows in real time.

3. **Networked economy.** Supply chain and logistics operations are by definition collaborative, but a seamless connection between stakeholders becomes increasingly important as more elements become involved. With more partners and customers getting involved in different parts of the supply chain, there is a need to control and gain visibility into the entire flow of products. For the warehouse, this means that even if it runs as a separate entity, the organization still needs to have transparency into its operations to monitor its effectiveness.

4. **Resource scarcity.** Whether it’s space or workers, companies are dealing with increasing levels of resource scarcity and must optimize their operations. For warehouses and transportation, this means constraint-based planning. Organizations must be able to onboard workers quickly when they bring on temporary employees for busy seasons, and these workers need to be able to use existing technology easily and work efficiently within the existing framework. As for the warehouse itself, the more efficient the movement and storage of goods, the more successful and profitable operations will be.
EXTENDED WAREHOUSE MANAGEMENT IN SAP S/4HANA

Warehouse management is a key component of the end-to-end logistics process. It is all about accelerating order delivery and reducing manual errors, which not only lead to increased costs, but also can affect a company’s brand if a customer’s delivery expectations are not met. Companies have long had basic warehouse management features in place in their classical ERP systems to mitigate these risks, but today’s demands on the supply chain require more advanced features, such as SAP Extended Warehouse Management, due to performance and speed limitations of classical hard disk-based databases. With SAP S/4HANA, this is no longer the case – these advanced features are now alongside the basic warehouse processes as part of one solution.

As of the 1610 release of SAP S/4HANA, extended warehouse management functionality is available in SAP S/4HANA to meet the needs of digital supply chains. These extended warehouse management functionalities allow for better physical storage, slotting, replenishment, and rearrangement. They can also help organizations identify the best location for storing materials and maintain control over the entire process while keeping in mind physical constraints. Added visibility means that changes to orders can be more easily accommodated because the warehouse manager has a solid understanding of what goods are in inventory, and where they are.

Unified Functionality in the Core
Extended Warehouse Management

Integration steps required between EWM and ERP
1. Configuration of communication between ERP and EWM using qRFC
2. Definition of a warehouse in ERP and EWM
3. Integration of the warehouse with the organizational structure of ERP
4. Initial master data transfer from ERP to EWM
5. Creation and activation of a Core Interface (CIF) integration model for the master data transfer from ERP to EWM

Extended Warehouse Management
- Inventory Management Optimization (e.g. Slotting)
- Inbound Process Optimization (e.g. Deconsolidation)
- Outbound Process Optimization (e.g. Waves)
- Material Flow Control
- Yard Management (e.g. TU handling, DAS)
- Labor Management
- Value Added Services
- Kitting
- Cross Docking
- Warehouse Billing

Basic Warehouse Management
- Inventory Management
- Inbound Process
- Outbound Process
- Internal Warehouse Movements
- Physical Inventory
- Reporting
For example, extended warehouse management functionality in SAP S/4HANA enables the ability to optimize inbound and outbound processes, which leads to a more efficient process flow. From a logistics perspective, companies can control the physical processes to a much more granular level than they could before, breaking down deliveries into work orders and warehouse tasks. For outbound deliveries, better packing and packaging means fewer errors, and with increased process efficiency, companies can handle greater volumes of orders at a faster speed, meaning customers get their deliveries more quickly and as expected.

Another example is how functionality in extended warehouse management helps companies optimize the logistics process within physical constraints, such as incoming trucks or ships with goods that need to be parked or docked for a certain period. For instance, it allows organizations to see what parking spots will be available when, which gate the truck should enter through, and how to optimize the offloading and loading of goods before the truck goes back out for its next trip. Or let’s say a ship arrives with goods – using the advanced analysis features in extended warehouse management in SAP S/4HANA, a company might realize that, rather than storing the goods in the warehouse, it can achieve better flow of materials by combining the goods with another shipment, and send the ship back out without unloading it at all. In both cases, the result is more efficient resource utilization and operations due to digital insights, meaning faster, better supply chain operations.

GO BEYOND THE WAREHOUSE

A key benefit of bringing the extended warehouse management functionality into SAP S/4HANA is that it better integrates warehouse management into the end-to-end logistics process that is the foundation for your digital supply chain. With added speed and data integration into other parts of your business, you enable better sharing of up-to-the-minute, accurate data, which translates into not only more efficient operations in the short term, but the ability to uncover – and eliminate – unneeded processes that are being repeated, paving the way to long-term efficiency.

Extended warehouse management in SAP S/4HANA can help companies innovate their warehouse processes and operate in a leaner fashion going forward – even companies that already had advanced warehouse management capabilities, albeit in separate, decentralized systems now have the option to consolidate their systems by moving to SAP S/4HANA. With the advanced warehouse management features and functionality included SAP S/4HANA, manufacturers can not only separate themselves from their competitors, but also stave off competition from smaller start-ups that have entered the manufacturing space from another industry altogether. With more efficient storage, packing, and shipping, warehouses can keep up with the demands of the modern consumer by playing a key role in the fast manufacture and delivery of goods.
Moreover, innovation cycles are speeding up – companies cannot continue to produce the same product year after year when customer expectations for technology, style, and utility change by the minute.

To serve the “market of one,” manufacturers can’t be beholden to antiquated, byzantine processes at giant plants, or they will be beaten to the punch by smaller competitors that can jump into e-commerce easily. They need to be able to operate nimbly across more regions, and be able to take into account the individual preferences and requirements of every customer. They need more efficient, more effective manufacturing processes that can offer short delivery times without holding too many components in their production cycle or too much inventory in their warehouses. These sorts of processes require planning – and a lot of it.

This is why SAP brought advanced production planning and scheduling (PP/DS) functionality directly into SAP S/4HANA. This functionality goes well beyond the basic planning features that were present in classical ERP systems, and allows manufacturers to build constraint-based production plans and harness data from across the organization to produce the right products at the right times with optimal efficiency – and work within an end-to-end logistics scenario.

**CONSTRANIT-BASED PRODUCTION PLANNING**

Advanced constraint-based production planning functionality has been around for a while in the form of advanced solutions such as SAP Advanced Planning and Optimization (SAP APO), but it’s been out of reach for many companies that didn’t want to put in the time and expense required to implement additional technology. These companies stuck with basic planning and scheduling functionality that came in their standard ERP systems, or cobbled together error-ridden, disconnected Microsoft Excel sheets or costly third-party systems – but these options are not suitable for today’s supply chain.

The problem with basic planning is that it can result in infeasible plans and schedules. This is because material requirements planning (MRP) was a concept developed decades ago that assumed infinite capacity requirements and generated plans that assumed the availability of all resources that you need to utilize to build products. But to use MRP in capacity-constrained production environments results in infeasible plans – and ends up generating orders on resources that are not executable.

Let’s look at some examples of capacity-constrained planning demands of today across different industries. In automotive planning, production is based on customer orders and forecasting, keeping in mind production restrictions. The plan is broken down into a short-term schedule of individual orders that are then executed on the production line in a “lot size of one” fashion, taking into account specific customer requirements in addition to production needs. Better yet, the company can anticipate problems through better part sourcing or
predictive maintenance on mechanical elements, avoiding any potential bottleneck or down-time whatsoever. One automotive SAP customer transformed its supply chain and manufacturing processes with SAP S/4HANA, and in doing so was able to better plan its production to cut down on delivery times from months to days – and this was while accounting for customized products and lot-size-of-one production.

Or consider a company in the process manufacturing-based industries where liquids stored in tanks need to be accounted for in the production schedule. When producing different beverages, for example, the company needs to plan for tank constraint volumes – it can’t get the recipe right if the tank is overflowing, and it can’t move the beverage from production to bottling if the beverage is not properly produced. The company needs to know various tank capacities, the time and schedule needed to drain and fill tanks, how to drain and clean lines that lead to and from the tanks, and then how this all ties to bottling. And for beverages that take time to mature, there are even more complications to consider for sequencing and scheduling.

A similar issue touches life science and food companies in the form of shelf-life planning.

Innovation cycles are speeding up – companies cannot continue to produce the same product year after year when customer expectations for technology, style, and utility change by the minute.

If a pharmaceutical company produces a pill with a limited shelf life, it needs to be available to the customer for as much of that time as possible. If a medicine is supposed to be taken by a customer for a month, but it expires a week after they buy it off the shelf, it leaves them with a poor customer experience. With more efficient planning and scheduling features in SAP S/4HANA, pharmaceutical companies can produce medicine more efficiently so it will have a longer time of viability in stores, resulting both in higher profitability and a better customer experience.

In all these situations, and many others, companies could use basic planning functionality and end up with infeasible production plans that don’t factor in elements from space constraints to available machinery to proper sequencing.
BEHIND SIMPLIFIED PRODUCTION, SIMPLIFIED TECHNOLOGY

SAP S/4HANA supports constraint-based planning because SAP simplified the underlying data model, so companies can now use functionality directly inside it that used to require complicated integration to other solutions. The removal of data redundancies increases speed and efficiency while giving users more direct access to the data they need.

In the past, users had to work with daily packets of data, but in today’s real-time world, they need more timely information. By being able to pull real-time information directly from SAP S/4HANA, companies can find significant benefits throughout the supply chain. For example, think about how better information sharing between warehouse management and production planning could improve the overall logistics operation. With a production plan, it’s important to know how much component consumption is taking place over a given time, say in two hours. With the former ERP set-up, there just wasn’t timely enough information. But now by having production planning and warehouse management data both within SAP S/4HANA, companies can know this information in real time, and improve material handling processes on the production line that in turn improves material handling in the warehouse. While looking at planning data, companies can trigger processes down on the production line. This leads to better, more efficient, end-to-end logistics.

Simplicity is also found in the user experience. The classic user interface (UI) could be cumbersome, but the SAP Fiori-based UI in SAP S/4HANA facilitates a more intuitive, logical experience. And this is only going to increase in importance moving forward, as design thinking and ease of use are top of mind for SAP in all developments.

The technical simplification and easier adoption of SAP S/4HANA are democratizing advanced planning, making constraint-based production planning available to many more companies than ever before.
ADVANCED PLANNING FOR ALL

With supply chain disruption happening everywhere, companies need to be able to innovate quickly, and effective production planning and scheduling is paramount. Because of the technical simplification and easier adoption of SAP S/4HANA – not requiring the assembly of a complicated landscape of point solutions for each piece of the logistics puzzle – constraint-based production planning is now available to many more types of companies than ever before. It’s democratizing advanced planning, bringing it to small and midsize manufacturing companies. With SAP S/4HANA, companies from small start-ups to large enterprises can optimize production and save costs to remain competitive.
Sales orders are integral to business, and with the rise of e-commerce, they’re only becoming more plentiful.

Instead of relying solely on large orders to a handful of retailers, manufacturers now ship many small deliveries directly to customers. As this trend grows, differentiation on delivery – not just in terms of speed and flexibility, but, more important, in sticking to the delivery commitment – is a key factor in the marketplace.

This is what makes available-to-promise (ATP) a core requirement for so many companies. Any time a sales order comes in for a product, there is a requested quantity, time, and location, and companies need to know this information to understand whether they can fulfill the request. But it’s often not just a simple check of inventory and fulfillment – there are many contingencies to consider: What if the order changes at the last moment? What if there isn’t inventory in the main warehouse, but there is in a nearby warehouse? Is there anything happening in the production process that could potentially affect this delivery? With a first-come, first-served (FCFS) strategy, are orders from the top customers getting fulfilled in time over lower-priority orders? These are the sorts of questions that advanced ATP technology can help companies answer. And now with SAP S/4HANA, this functionality is directly embedded within the solution, no longer involving separate installations or complex integration. SAP S/4HANA recognizes that ATP is core to so many companies’ business and provides the technology needed to improve these functions that extend into the rest of the logistics and supply chain process, so the company can provide an excellent customer experience and not lose out to the competition.

**GAINING VISIBILITY INTO FULFILLMENT**

We live in an omnichannel world. Whether it’s a website, an app, a retail store, a subsidiary, or anything else, companies sell the same products through many channels. Without proper visibility into the different channels, they could struggle with fulfillment and profitability.
Visibility is important because companies are dealing with more sales orders than ever before due to the ease of purchase online. They still must deliver large orders to business-to-business (B2B) customers but now also must accommodate many more business-to-consumer (B2C) customers. The consequences in these spaces are different, but important. In B2C, not meeting delivery dates negatively affects the customer experience, putting some doubt on a customer’s future purchasing activity. But for B2B, it’s even more serious. Imagine a B2B manufacturer plans the manufacturing of a product based on the delivery of materials in five days. If it takes seven days, the entire plan is thrown off – suddenly the company has unused labor, machinery, and materials either to redeploy or leave stagnant. A production line that is shut down is going to have negative effects all the way through a business unit – and create a serious problem for the supplier that could not meet its delivery deadline.

Using the advanced ATP functionality in SAP S/4HANA, these sorts of scenarios can be avoided. Companies can provide feasible delivery commitments beforehand, ensuring that they can deliver what they promise. This results in a streamlined order fulfillment process and happier customers.

MAINTAINING PROFITABILITY

It’s one thing to maintain fulfillment effectiveness at its base level, but the next step is to optimize it for profitability. From prioritizing low order processing costs to shortening the order-to-cash cycle, SAP S/4HANA can help companies run their ATP processes profitably.

One way SAP S/4HANA does this is by helping prioritize more profitable channels before others. For example, imagine that a company has five business-to-business (B2B) customers, a mix of major retailers and subsidiaries, and on top of that they have opened a new channel where customers can order via a mobile app. However, the company has a limited supply of items, say 100, to distribute among these channels. How does it decide how best to distribute these items? The most obvious answer might be to split it evenly among the channels or to simply operate on an FCFS basis, but not all channels are equal. What if the lowest-priority customer, which sells less than others or involves greater shipping costs, asks for 60 items and then the top customer asks the company for 60 items later? The company no longer has the inventory to fulfill the latter order, thus making for less profitable fulfillment and potentially straining the relationship with the top channel.

A day in the life of a call center employee using advanced ATP functionality

Receive Order

Call Center employee receives an inquiry/order from a customer on phone.

Check Real-Time Inventory

She invokes the ATP check for the requested quantity of the product for the desired date and delivery location. Checking the real-time inventory situation and considering “Allocations,” the system provides accurate commitment dates.

Confirm Delivery Date

Based on the real-time confirmation situation the call center employee communicates the feasible delivery date to the customer.
In the back order processing functionality that is part of the advanced ATP features in SAP S/4HANA, companies can label orders using a five-category set-up:

1. **Win.** Fulfill fully.
2. **Gain.** Fulfill if possible, but orders can’t be changed to a lower confirmation quantity.
3. **Redistribute.** These can gain or lose confirmation quantity as needed.
4. **Fill.** These are the lower-priority orders that can lose confirmations if required, but in no case gain any further confirmation.
5. **Lose.** These are customers that have not paid for months, for example, and shouldn’t have anything fulfilled until they have paid.

Using this mechanism, companies can ensure that the right orders receive the desired fulfillment all the time, leading to higher service levels and profitability.

EFFICIENCIES THROUGHOUT THE SUPPLY CHAIN – AND BEYOND

The advanced ATP functionality in SAP S/4HANA comes with a very simple, intuitive mechanism for maintenance of allocations to protect key customers or regions based on defined logic. These allocations ensure that the interests of top-priority customers are protected even when the company has limited supply and employs an FCFS scenario.

Companies also need flexibility for last-minute changes. After running back-order processing overnight, companies often get a last-minute request to change an order in the morning before deliveries were to be created. They were planning to fulfill 20 items, but the customer now needs 30. Doing back-order processing again is not possible, but a quick manipulation is needed, and with SAP Fiori app Release for Delivery, the company can find where they can pull the additional items from.

These features have clear benefits for the entire ATP process more from a supply chain perspective, but they also help customer service. Consider a

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**Back Order Processing**

New confirmation strategies in SAP S/4HANA

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<table>
<thead>
<tr>
<th>Highest Priority</th>
<th>WIN</th>
<th>GAIN</th>
<th>REDISTRIBUTE</th>
<th>FILL</th>
<th>LOSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loyalty, Profitability, Reliability, etc.</td>
<td>Confirm as requested</td>
<td>Improve if possible</td>
<td>Redistribute and reconfirm</td>
<td>Delete confirmation, if required</td>
<td>Delete confirmation</td>
</tr>
<tr>
<td>Lowest Priority</td>
<td>shall be fully confirmed in time</td>
<td>shall keep the confirmations and should gain if possible</td>
<td>shall not gain anything, should keep confirmation, but may also lose</td>
<td>shall lose all confirmations</td>
<td>e.g. The most important customer orders</td>
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call center employee who receives a call from a customer looking for many products (see chart below). The call center employee must check the inventory, check for the right allocations, and provide the accurate date. And this has to be done quickly, while the customer is still on the phone.

MORE TO COME

In the next release of SAP S/4HANA, more features focused on visibility are planned to be released. When looking for alternatives during confirmation – for example, instead of delivering from Chicago, deliver from Minneapolis, or instead of two 10-liter cans, deliver four five-liter cans – traditional ATP employs first-fit confirmation. With the new enhancements in SAP S/4HANA, companies will be able to choose the best alternative based on pre-defined key performance indicators (KPIs), such as selecting the nearest location or the most abundant product. Additional planned features include more analytics, machine learning, capable-to-promise functionality that factors in additional elements such as production capacity and availability of raw materials or components, and industry-specific features such as shelf-life planning.