The Magic Cube of Inventory Management

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Dear Readers,

Highly accurate availability of medical devices, medical technology and medicinal products at the point of care is of increasing competitive importance. In this context, reliable management of inventory for consignment stock in hospitals or local forward stocking locations (FSLs) can be an alternative to express deliveries. In intelligent combination with European central warehouses, this can lead to an overall reduction in inventory even at the highest level of availability. Arvato has developed a tool, the Magic Cube of Inventory Management that provides analytic support for optimal field inventory.

Field inventory management is generally outsourced, increasingly as part of an integrated process chain and across multiple countries. In this issue of our healthcare news, you can read an economic analysis of the reasons for the trend toward integrated outsourcing of entire process chains, and of who stands to benefit from it in which situations in comparison with best-in-breed outsourcing.

I’m also pleased to present our new site in Birmingham, which we opened early this year. Since May, Arvato Supply Chain Solutions has also been offering healthcare customers a solution for the distribution of medications in Portugal – thanks to a collaborative effort with Rangel Logistics Solutions. You will find more about this and other topics over the following pages.

Happy reading!
Sincerely,

Dr. Thorsten Winkelmann
President Healthcare
Arvato Supply Chain Solutions
Medical device manufacturers increasingly face the challenge of managing their products at the point of care. Their customers, the hospitals, need products to be delivered quickly to the ward and also require constant availability of medical technology without a high level of financial investment. For manufacturers, this involves write-offs due to expired products, additional inventory costs and over-burdening of sales departments with secondary activities, all in an increasingly competitive field.

**Managed consignment stocks as an optimal complement to central warehousing**

Many notable medical technology manufacturers rely on European central warehouses within logistics structures that are organized globally. Due to the relatively long delivery times to the point of care, “out of stock” situations can occur and lead to rush and emergency deliveries, which can often be very costly, or even to a loss of sales for the medical technology manufacturer. Professional inventory management models are the solution here. Intelligent field inventory management solutions in particular create a bridge between central warehouses and local availability of inventory. 

**Optimized inventory management as a challenge for manufacturers**

“Manufacturers of medical devices try to differentiate themselves from competitors within the market by offering a higher level of service, such as bundling of modular service packages that go above and beyond just delivery to the hospital’s receiving department or direct sales, or by offering advantageous billing plans. The goal here is to set the hospital’s payment date as close as possible to the surgery date and at the same time guarantee the highest possible level of product availability,” explains Dr. Sebastian Verhoeven, Vice President of STOK Europe. Ways to approach this include setting up long-term consignment warehouses or using implant or loaner kits for short-term consignment such that individual components are assembled for particular operations and delivered to hospitals as needed for a surgical procedure.

A clear weak spot in the use of these inventory management concepts is the great burden on the manufacturer’s sales representatives, who have to monitor inventory on site or often have to handle returns of kits and short-dated items themselves. Additional difficulties also arise.

Arvato makes use of a tool to support medical technology manufacturers in analyzing what optimal field inventory management could look like for their companies. The Magic Cube of Field Inventory Management facilitates the basic process.
One of these challenges involves optimal inventory management. Manufacturers often do not have full insight into product usage and thus don’t have complete knowledge about actual inventory and demand in the hospital. This uncertainty can quickly lead to excessive or incorrect inventory. This brings with it a risk of write-offs due to loss or expiration, sales losses or incommensurate capital commitment in consignment warehouses. In the worst-case scenario, there is a risk of expired products being implanted.

Another challenge for manufacturers is selecting the right combination of long-term and short-term consignment models and thus finding a customized solution for every product and every customer. Often, one plan is simply used for all product and customer groups. This reduces complexity, but it also misses out on potential cost savings.

“STOK, with its specially developed calculation tool, offers a possible solution for combining different approaches yet not getting overwhelmed by complexity. STOK prepares a customized, cost-efficient plan using current manufacturer inventory data. We ensure a high level of service in combination with a low management burden for all customers,” explains Matthias Klütt, Country Manager of STOK DACH & Benelux.

What concepts are on the market already?

Long-term consignment – cycle counting, inventory management, etc.

Generally, long-term consignment (LTC) refers to manufacturers setting up warehouses at the point of care in which products are stored continuously until they are used. Hospitals sign out used items, triggering billing as well as replenishment. Failure to do so results in a lack of transparency and thus discrepancies between physical and systemic inventories, which can lead to out-of-stock situations. In order to avoid this, manufacturers often build up excessively high inventory levels and thereby increase the amount of capital committed in the market as well as the expiration risk for unneeded products.

Regular cycle counts increase transparency with respect to consignment warehouses and minimize the aforementioned discrepancies. For these counts, the manufacturer’s distribution employees or specialized STOK employees go to the hospitals to take inventory and clear up discrepancies on-site or after the fact. The manufacturer receives detailed analyses of use and recommendations for optimizing inventory management. Outsourcing to service providers reduces sales representatives’ workloads, leaving
them with more time for their primary tasks, like distribution and customer care. Service providers also benefit from scaling effects, as they work simultaneously for multiple manufacturers.

Inventory or use-before-date management supplements cycle counting by identifying and selectively collecting products that are close to their expiration dates. The objective is to make appropriate use of these products within the given time and thereby prevent write-offs.

In addition, short-dated products are marked so they can be used before they expire. Sterilized items with a remaining shelf life that is too short are proactively collected prior to the expiration date and replaced if needed.

Vendor-managed inventory (VMI) is the full-service package within long-term consignment, including inventory checks, the refilling of products to the defined target inventory level and billing services. “Manufacturers that use the STOK VMI service increase their revenue, because the nursing staff just needs to retrieve the required product from the shelf; everything else is handled by STOK. That, of course, is very popular,” says the STOK DACH & Benelux Country Manager.

**Short-term consignment**

In contrast to the LTC model, short-term consignment (STC) does not involve fixed locations in hospitals. Instead, hospitals receive the products in the form of kits, each of which is...
made available in different configurations for an operation. The kit, including unused material, is then picked up and an invoice is generated on the basis of the items that have been removed. Here, there is no risk of excessive inventory or expiration.

However, use and transport of these kits often takes a few weeks, which delays billing and increases the risk of damage or loss. Unnecessarily long circulation times also delay payment by the hospital and damaged or lost products have to be written off. If the manufacturer itself handles the return, there is often a conflict between the employee’s actual core activities and the need to pick up a kit at short notice. Aspects related to costs and feasibility must also be taken into account; sales representatives are often over-qualified and too expensive for tasks such as picking up an implant kit.

Many of the kits do not fit into the sales fleet vehicles, often making it necessary to use expensive transporters to deliver the kits to the point of care and then pick them up again. STOK, on the other hand, has access to this type of logistics resources. Suitable vehicles are used specifically for tasks such as picking up implant kits. This can often reduce the time in circulation to a few business days.

Forward stocking locations
“...A very high percentage of hospital inventory today consists of safety stock. If we bundle it at a centrally located forward stocking location (FSLs), the level of safety stock can be significantly reduced, which decreases the amount of capital committed,” explains Matthias Klütter. Emergency shipments in particular, as well as delivery of implant kits, can be made to hospital wards from FSLs within a few hours. Both LTC and STC models, in conjunction with FSLs, involve intensive management by the manufacturer; this work, however, is not part of the manufacturer’s core area of expertise.

The customized STOK solution – a combination of different services
For medical device manufacturers, there are numerous drivers determining which consignment model is best suited for particular needs. Three main drivers play a special role: the product value of the individual items, the frequency of use and turnover with the hospital. However, the population density of a region and the size of clinics should also be taken into account.

A few core statements can be used as guidelines for deriving and applying this approach:

1. The combination of high fluctuations in consumption with low product values as well as low turnover should lead to the use of a direct purchasing model (lowest service level, as the hospital carries out all activities itself). Here, an exception may be made if the customer is seen as strategic and a higher level of service can be transformed into potential for growth.

2. If, on the other hand, the volume of sales with the hospital is high, a higher service level should also be considered, not just in order to reward the customer for the sales, but also to secure the high share of sales at the institution or to obtain an additional share of the sales.

3. The higher both product values and fluctuations in consumption are, the more sense it makes to make products available individually. Here, direct delivery from FSLs and implant kits are suitable options.

4. In a very large number of cases, it is worth offering long-term consignment services with regular cycle counts. This is true in the case of low fluctuations in consumption and relatively high product values as well as with relatively low product values with a relatively high sales volume. It is interesting in this context that more than two-thirds of hospitals surveyed, according to a recently conducted STOK study,* prefer that counts occur at least quarterly!

5. Sales volume per customer correlates with metropolitan areas. The more hospitals there are in a region, the higher the cost efficiency. This makes it possible to provide a higher level of service, since services like FSLs or VMI can be offered even for smaller institutions or departments with a lower sales volume.
The following figures graphically represent the core statements above as well as other associations in a comprehensive way (Figure 1) and a more detailed fashion (Figure 2). In addition, Figure 1 categorizes the particular service level, the inventory-lowering potential and the amount of management work required for the manufacturer.

Additional benefits through outsourcing of inventory management
The potential bundling effects constitute another important factor, in addition to lowering the amount of management-related work, increasing the level of service and lowering the amount of capital committed.

Nearly 80 percent of hospitals surveyed* evaluate the simultaneous performance of inventories for multiple manufacturers as positive or very positive, since this involves significantly less disruption of hospital processes. Moreover, using outsourcing models yields additional synergistic potential for manufacturers, since the STOK employee only has to come one time, check in one time and bring the items into the hospital one time, which has a positive effect on every business case.
Managing inventory efficiently with STOK

"By incorporating STOK services into the manufacturers’ consignment warehouse models, we help our customers save costs and simultaneously distinguish themselves from the competition by increasing the level of service. Administration of consignment warehouses is moved from a central point, the hospital, to a higher level of the supply chain and thereby becomes both more efficient and more transparent. The value of the inventory and thus the committed capital decreases and stock-out situations are simultaneously avoided due to rapid transfer from forward stocking locations onto the market," explains Dr. Sebastian Verhoeven. A STOK study* also confirms that 98 percent of those surveyed are satisfied with STOK’s current on-site analyses of discrepancies.

Arvato’s own forward stocking locations can be seamlessly integrated into any consignment solution. The FSLs are, of course, integrated into Arvato’s European warehouse management and quality management systems. This means that clients have a comprehensive overview with full control of their inventories and products beyond the central warehouse. At the same time, they benefit from the just-in-time distribution of urgent deliveries. Trained drivers use STOK’s own vehicles to make these urgent deliveries, so there is no need to pay high prices for express delivery services from central warehouses. "The sales rep only needs to convey the information about when certain products are needed, for example, for an operation in the hospital. STOK takes care of the rest," says Verhoeven. Another result of the study* shows that for three-quarters of the hospitals surveyed, the inventories that are performed make the daily workload easier.

Analysis tool as a basis for an individualized solution model

STOK’s complexity-mastering, high-quality portfolio of services benefits both manufacturers and hospitals. It is possible to calculate which type of inventory management and which services will bring the greatest benefit for each manufacturer – first using the Magic Cube’s core statements and then using a calculation tool developed by STOK and the University of Duisburg’s professorship for transport systems and logistics. To do this, data from the manufacturer’s supply chain, such as the locations of the actual stock in the field or information about write-offs, can be stored using a template. Using this data, STOK then prepares a customized model that supports the manufacturer in building up an optimized mix of LTC, STC or FSLs. The Magic Cube is used for orientation purposes. “We adapt these recommendations to the individual customer and work with the manufacturer to find the most suitable service packet and then increase that manufacturer’s sales, reduce inventory discrepancies and lower costs,” notes Klütt.

STOK takes care of product management and uses its years of experience to optimize medical technology companies’ inventory in the field.
Conclusion

Three main drivers for the determination of the consignment model play a special role:

- The product value of the individual items, the frequency of use and turnover with the hospital.
- The Magic Cube of STOK helps to optimize medical technology companies' inventory in the field.

*All results of the study carried out in collaboration with the University of Paderborn’s professorship for service management can be viewed in this issue of the newsletter on page 12/13.
In addition, an international medical technology manufacturer carried out a study from July through September of 2017 to determine how satisfied hospitals are with Arvato’s STOK services; this study has already shown that 98.5 percent of the customers are satisfied with the analyses of discrepancies that STOK employees perform on site. This figure was subsequently confirmed in our own recently conducted survey: 98 percent of participants think very highly of STOK’s on-site analyses of discrepancies. The current study also shows that, for three-quarters of the hospitals surveyed, the inventory counts conducted make day-to-day work easier. STOK offers a modular service concept at the point of care that covers inventory counts on the ward, usage analysis and even the restocking of medical products. This eases the burden on both medical technology manufacturers’ sales representatives and on hospital staff, who then have more time for what really matters: patient well-being.

When it comes to the question of whether having additional stock brought in for replenishment purposes would bring added value if it occurred at the same time as stock-taking, almost one-fifth of those surveyed responded in the negative and thus expressed objections to active replenishment during inventory counts. More than half view the service as a positive added
value. And two-thirds of the hospitals surveyed prefer quarterly counts. Just under one quarter find monthly inventories to be optimal. The visit cycles can be coordinated individually with the manufacturer. There is also flexibility regarding the systematic on-site stock-taking process. Either STOK’s own scanner-based stock-taking system can be used, or the manufacturer’s own IT solutions can be integrated into the process.

The respondents did not quite agree as to whether shorter periods between counts have a positive influence on the counting of consigned goods and the accuracy of the counts. Just under half of all study participants agree and see shorter intervals between stock-taking as an added value. About one-third take a neutral view of the question, and for 15 percent, shorter intervals have no influence on the counting or accuracy of the inventory.

It is worth mentioning the result regarding the question of whether hospitals find it advantageous to be able to carry out inventories for multiple manufacturers at the same time. Eighty percent completely agree that it is, as hospital processes are thereby significantly less disrupted.

In addition to supporting healthcare companies with respect to optimal inventory levels or delivery frequency, STOK employees are also available as ongoing contacts for each hospital. This builds trust with nursing staff while also improving the partnership between the hospital and the manufacturer. Manufacturers then benefit from potential synergistic and bundling effects, since the STOK Field Data Analyst only has to go to the point of care one time, check in one time and take the goods into the particular hospital ward one time.

The study is being expanded in collaboration with the University of Paderborn; the goal is to use detailed interviews to obtain additional information about the added value of STOK inventory management. The full survey results are available on the Arvato website. The results of the survey in other European countries in which STOK offers its services are also gradually being published there.

74% of the participants felt that the inventory counts conducted make their daily work easier.

80% of the hospitals like that STOK can perform counts for multiple manufacturers at the same time.

98% of the customers are satisfied with the analyses of discrepancies that STOK employees perform on site.

85% see additional value if STOK immediately provides replenishment with a count and sorts replenishment onto the shelf.

57% think a higher count frequency has a positive impact on stock accuracy and the inventory counts.

The traditional reasons for outsourcing logistics include realizing scale effects, labor cost benefits, using the service provider’s function-specific expertise and related innovation capacity, and concentrating management activities on core competencies. The first outsourcing wave that began in the early 1990s was driven mainly by labor cost benefits, while the motive behind the second wave was predominantly the desire to take advantage of the service provider’s technical and management expertise.

In 1972, the British economist G. B. Richardson* outlined very clearly the criteria by which activities within a company should be carried out or, alternatively, they should be outsourced and then coordinated accordingly via the market or intercompany collaborations. In addition to the affinity of capabilities, which – to simplify – can be compared to similar expertise and in terms of the result with scale effects, i.e. the traditional reasons for outsourcing mentioned above, he also emphasizes the complementarity of activities.

A high level of complementarity exists when there are a number of interfaces between two activities, and complex and frequently recurring coordination processes are required or make good commercial sense, or high one- or two-way dependencies exist, in particular as a result of specific investments.


These days, outsourcing (contract) logistics activities is an obvious choice when designing and optimizing supply chains. This is particularly true of companies that are not attached to an existing infrastructure. While in the past it was usually companies based outside of Europe – in particular the US, Japan, and South Korea – today, outsourcing logistics is theoretically and practically a viable option for all companies.

Industry is currently experiencing a third outsourcing wave, and this is all about outsourcing integrated process chains and whole geographic networks to service providers, rather than isolated activities such as warehousing in one country. This raises the question of the economics behind this trend, and why such economics are coming into effect at this point in time. 

Integrated or best-of-breed outsourcing?

AN ECONOMIC ANALYSIS BY THORSTEN WINKELMANN, PRESIDENT HEALTHCARE AT ARVATO SUPPLY CHAIN SOLUTIONS

These days, outsourcing (contract) logistics activities is an obvious choice when designing and optimizing supply chains. This is particularly true of companies that are not attached to an existing infrastructure. While in the past it was usually companies based outside of Europe – in particular the US, Japan, and South Korea – today, outsourcing logistics is theoretically and practically a viable option for all companies.
Outsourcing integrated process chains

After that theoretical explanation of the economics, we must now ask what its practical relevance may be for outsourcing logistics. To illustrate this relevance, the first step is to list the activities that can be outsourced, going beyond warehousing as a core activity of distribution contract logistics.

- Warehousing (as a core, and therefore anchor, activity)
- Transport
- Order and Cash Management
- Field Inventory Management
- Quality Assurance
- Reporting and Business Intelligence
- Manufacturing, Postponement
- Returns and Repair activities
- IT (in accordance with the respective activities)

How the supply chains and their coordination structures actually look is determined to a great extent by the client’s outsourcing decisions. The clients – most of whom are industrial companies, brand companies, and verticalized retailers – usually only perform the above-listed activities to meet their own needs, and can by definition only achieve scaling benefits to a limited degree as a result. As a rule, these companies have no edge in terms of expertise in the respective disciplines, nor can they maintain or develop it. Outsourcing the individual activities therefore makes sense unless there are significant complementarities and interfaces with other activities within the client company, for example between sales and order management.

If, on the basis of these analyses, a company decides to outsource several of the above-listed activities, they must then choose whether to opt for best-in-breed outsourcing for each individual function and award contracts to the best supplier in each area, or outsource whole integrated process chains to a single service provider, as corresponding complementarities also exist between the individual activities. Customer and article master data is required in almost all activities; orders become consignments, consignments become transports; inventories can be better optimized if all the storage locations including the inventories at the place of consumption are known and this information is integrated into the production management including postponement. The list of examples could be extended, fleshed out and specified in greater detail.

Best-in-breed offers the advantage of optimal value for money for the respective outsourced service. However, this approach involves a number of company-wide interfaces, which – depending on the complementarity of the activities – bring about varying levels of additional management complexity and therefore costs. An additional aspect to consider, one that is often even more important, is that the complexity that can thereby arise could lead to frictions, a need for high levels of multilateral coordination, different interests and priorities, unclear responsibilities, and ultimately delayed action and reaction in a competitive environment, and this sometimes gets out of control.

The economic advantage of outsourcing integrated process chains to a partner comes from the fact that a suitably set up service provider carries out the relevant activities in a standardized way. Interfaces must be set up only once, costs are reduced.”

Thorsten Winkelmann
President Healthcare

Inhouse

![Inhouse diagram](image1)

Best-in-breed outsourcing

![Best-in-breed outsourcing diagram](image2)

Outsourcing of integrated process chains

![Outsourcing diagram](image3)
Outsourcing integrated process chains avoids this complexity. The economic advantage of contracting whole process chains comes from the fact that a suitably set up service provider carries out the relevant activities in a standardized way in accordance with the modular principle, and establishes interfaces between these activities once and once only, and can thereby achieve significant economies of scale. Through the standardized modular approach, each client receives a highly individualized service, which in turn improves the cost effectiveness of outsourcing, and thereby encourages the practice of contracting services out. This then leads to even higher economies of scale, from which everyone involved benefits. It may sound paradoxical, but individualization makes the scale effects possible.

When deciding between best-in-breed and integrated outsourcing, the main issue to consider is the relative advantages of optimal individual activities and the additional cost of the company-wide coordination of activities. This clearly means that there is no such thing as an optimal solution that applies to all cases. Rather, the question that must be asked is in which situation each approach would be suitable. Speaking generally, it can be argued that best-in-breed outsourcing tends to be more suited in more static environments in which cost efficiency is normally a decisive competitive factor because over time, the cost of company-wide coordination can be optimized where the requirements are clearly defined and relatively stable. Most importantly, however, intersections between activities can, once established, pay off over a long period of time.

In contrast, outsourcing integrated process chains is better in dynamic markets that are unfamiliar to the client, for example when

- new sales channels are tapped (direct sales, e-commerce),
- new products with their own sales-channel requirements are introduced,
- new geographic markets are opened up (market entry by Asian or American companies in Europe),
- acquired companies are integrated, or
- existing distribution and logistics networks are transformed.

Ultimately, this is about reducing the complexity from the client’s point of view, and this is reflected firstly in speed advantages and secondly in the use of the service provider’s expertise in relevant projects, and the management of a major subproject in the client’s overall project.

Against this backdrop, it is clear that outsourcing integrated process chains is currently gaining in importance for the pharmaceutical and medical technology sector, for example. New, personalized (in the broadest sense) medicine, direct sales, and the regionalization of logistics structures in Europe moving away from national logistics solutions are all important keywords in the field.

**Outsourcing whole regional networks to a strategic partner**

Alongside the issue of outsourcing integrated process chains, another dimension involving a similar question reveals itself through the regionalization of logistics structures: Is it better to opt for a best-in-breed service provider in every country or to award the contract for a whole region such as Europe to one strategic partner?

In essence, when it comes to the regionalization of logistics structures it is a matter of optimizing the supply chain and associated inventories, availability, and costs for the whole region,
rather than by each individual country. This can result in relying solely on central warehouses, on hub & spoke centers, or on several fully integrated warehouses in the region. Central warehousing concepts in particular can be effectively combined with field inventory management concepts such as consignment stocks and forward stocking locations in order to combine inventories in their entirety with the highest possible levels of product availability.

In cases where there are several warehouses in the region and possibly also field inventory management concepts, a key factor in the decision regarding whether to use a local best-in-breed provider or to outsource the whole network to one strategic partner is the potential economies of scale that can be achieved in functions that extend across national borders and company locations. Specifically, this involves IT, the management of the customer-supplier relationship in particular also with regard to the regular performance-indicator-based management of the business (reporting), and quality management in the healthcare sector. However, it is not all about cost regression in these functions, but also transparency, for example in inventories and sales figures by sales channel, as well as about speed, reliability, and security (compliance).

As a rule, when outsourcing the whole network to a strategic partner, it is an obvious choice to also outsource the non-warehousing activities for a whole region to one partner. However, if doing so, it is important to bear in mind that when it comes to functions such as order and cash management, local best-in-breed providers may have a better understanding of the national market and business practices than multinational service providers. In addition to designing the supply chain activities – e.g. central vs. local order management – it is then important to consider whether the economies of scale in central functions and other central governance aspects outbalance the best-in-breed advantages offered by local providers. Ultimately, it is also important how quickly a strategic partner can acquire the local expertise and thereby close the gap as far as possible.

**Conclusion and future prospects: The role of new technologies**

The third outsourcing wave in logistics is currently being driven by new, direct sales channels, innovative and complex products, M&A activity on the client side, intelligent and digitalized systems in logistics and supply chains including the associated investments, and increasingly complex governance and compliance requirements. As part of this trend, increasingly integrated process chains and whole regional networks are outsourced to a strategic partner.

It is not yet possible to say whether and to what extent new technologies such as the cloud computing and services facilitated by it, blockchain, and uberization will affect supply chain and coordination structures in logistics over the long term. On the one hand they make it possible to efficiently handle interfaces, which would speak more in favor of best-in-breed concepts in the long term; on the other hand, however, the technologies must first be introduced and adapted, which in the short and medium term points to a strategic partnership with an integrated service provider who takes over the work.
The Future of the Healthcare Supply Chain

However, while the sector faces unique challenges, there are also unprecedented new opportunities that range from the growth of direct distribution channels to individualized medications. In order to benefit from the trends developing in the sector, it is essential that we know how companies organize their supply chains and where manufacturers face potential challenges.

In the white paper on “The Future of the Supply Chain in the Healthcare Sector,” experts from Arvato show how the supply chain’s future could look. They analyze the influence of five different aspects in particular.

- Specific transport and storage requirements or rapid availability are needs that are examined more closely under the aspect of “product specifics.”
- In addition, supply chains need to be built up in an agile and flexible way; “just-in-time” and “on-demand” strategies are key words here.
- A focus on patients and a focus on risk are two additional aspects analyzed by our experts.
- To what extent are patient expectations changing? How do we guarantee supply chain security?
- And what role do postponement and automation solutions play in ensuring both high performance and low costs?

Find more interesting whitepapers and studies by Arvato Supply Chain Solutions, like Industrie 4.0 and the rise of the digital supply chain. Our whitepaper provides comprehensive information about the challenges of digital transformation and the benefits of digital supply chain management.
Distribution of Medications in Portugal

ARVATO AND RANGEL ENTER INTO PARTNERSHIP

Since May, Arvato Supply Chain Solutions’ Healthcare business unit has been offering healthcare customers an integrated solution for the distribution of medications to hospitals, pharmacies and wholesalers on the Iberian Peninsula – thanks to a collaborative effort with Rangel Logistics Solutions.

This Portuguese pharmaceutical logistics company with years of experience in the market is a strategic partner with the ability to meet the pharmaceutical industry’s high quality standards.

Rangel’s Pharma division, founded in 2009, has all the structures necessary to safely deliver sensitive pharmaceutical products to customers, including its own temperature-controlled distribution network and innovative tracking systems. “The Rangel location in Montijo, close to Lisbon, distributes more than 100 million packages a year and has a team of 185 employees, a 70-vehicle fleet and 18,500 square meters of warehouse space with a capacity of about 30,000 pallets,” says Nuno Rangel, CEO of Rangel Logistics Solutions.

“The partnership represents a significant further development of Arvato’s Iberian solution for the pharmaceutical industry and helps our customers meet their requirements with reduced transport costs and increased delivery reliability,” explains Joaquin Prados, Sales & Solution Design Director for Arvato Supply Chain Solutions in Spain. “In Spain, it is a statutory requirement that medications be delivered to recipients, such as pharmacies, within 24 hours of being shipped. We are now able to meet this requirement.” With this new partner, Arvato has expanded its European healthcare logistics network to a total of 13 countries, 20 locations and more than 200,000 square meters of warehouse space.

By combining similar IT systems, Rangel Pharma and Arvato will offer maximum transparency across all distribution processes, with intelligent automation and scanning procedures. “All processes are integrated into Arvato’s IT landscape and involve a harmonized quality management system,” summarizes Thorsten Winkelmann, President of Healthcare at Arvato Supply Chain Solutions.

Rangel’s healthcare division recently invested in a € 750,000 eKooler system, an innovative technology for refrigerated transport of pharmaceutical products. The new partner also has a warehouse in which products are stored at 2°C to 8°C. Rangel has also placed a new solution on the market that tests medications for counterfeiting in order to meet the European guidelines in the Falsified Medicines Directive.

The Montijo location and all of Arvato’s activities in Iberia will meet Good Distribution Practice (GDP) requirements. “Our portfolio in Portugal includes services that range from warehousing, pick and pack, transport and returns management to emergency shipments,” says Joaquin Prados.

About Rangel

Rangel Logistics Solutions was founded in 1980 and quickly positioned itself in the market as a global logistics service provider.

The company offers transport and logistics services in categories that include the following: Customs Broker, Road Freight, Air & Sea Freight, International Express, Express & Parcel, Contract Logistics, Custom Critical and FeirExpo.

Today, Rangel has a presence in five countries and a worldwide network with global partners.

With its 1,500 employees, in 2017 Rangel had revenue of € 170 million; it has 263,000 square meters of logistics space.
The warehouse was completed in the summer of 2018 and was first occupied in October. Then, in January of 2019, Arvato celebrated the launch of the new healthcare location with 25 employees in Birmingham.

With a total area of 2,500 square meters, the new site offers space for a total of 1,100 pallet racks, spread throughout a 2,000-square-meter building with an additional 500-square-meter mezzanine.

In mid-March, the first packages were then sent from the site to the manufacturer’s customers – for an international medical technology company and for a pharmaceutical manufacturer. Currently, the first six customers have already been implemented, including the Japanese pharmaceutical company Otsuka.

Special pharmaceutical industry requirements are met

Our customers’ pharmaceutical and medical technology products are stored in an ambient temperature range of between 15°C and 25°C. This year, temperature-controlled zones are set to be added for storing products at 2°C to 8°C and -20°C. The site already received its GDP certification in January and thus meets the accepted Good Distribution Practice standards. The plan is for GMP licensing to occur during summer 2019 so that manufacturing activities can also be carried out. Furthermore, this month the site received the ISO 9001 certificate according to the standards for international quality management, ISO 13485 is also in the pipeline.

The Birmingham site received the applicable certificates from Great Britain’s Medicines and Healthcare products Regulatory Agency (MHRA) in February. In April, handling of refrigerated products and export activities were added to the certification. The ability to export to other countries is thus ensured. “We are optimally prepared for Brexit, regardless of the form it takes,” explains Adele Smith, Managing Director of Arvato Supply Chain Healthcare in the UK.

Arvato handles order-to-cash service, consignment management and transport services from the location. “Because of the growing demand in Great Britain, the new location in Birmingham is an important step for the expansion of the Arvato network. With the certificates we have obtained, we can offer customized healthcare supply chain solutions for our customers,” says Dr. Sebastian Verhoeven, Vice President of STOK Europe.

“The forecast is for shipment of over 5 million units per year,” the president adds.
As a company with a high level of IT expertise, Arvato Supply Chain Solutions has been quick to initiate the transformation from traditional physical to digital value chains and to define digitization, in the area of healthcare and elsewhere, as a forward strategy.

The answers from the 100 decision-makers surveyed by the LogiPharma Report to the question of data usage in the supply chain show that predictive analytics play an important role (page 22). Technical innovations like customer data analytics and machine learning are already being implemented in many large companies.

Arvato analyzes data with relevant business intelligence tools. We thereby offer our customers relevant integrated, scalable solutions along the entire order-to-cash cycle, create new state-of-the-art structures by means of automated warehouses and optimize existing processes. We pay special attention to the areas of automation and the creation of digital added value.

### Internet of Medical Things & Connected Medical Devices

A study by Deloitte corporate consultants predicts that the IoMT market will grow from US$41 billion in 2017 to US$158 billion in 2022.

**Significant IoMT market growth predicted**

The Market for connected medical devices is predicted to grow from $14.9 billion in 2017 to $52.2 billion in 2022

- **Stationary medical devices**
  - 2017: $5.7bn
  - 2022: $17.0bn

- **Implanted medical devices**
  - 2017: $5.1bn
  - 2022: $18.9bn

- **Wearable external medical devices**
  - 2017: $4.1bn
  - 2022: $16.3bn

**Total**

- 2017: $14.9bn
- 2022: $52.2bn

Source: Deloitte, Center for Health Solutions: Medtech and the Internet of Medical Things, July 2018

In the 2019 LogiPharma Report, 100 pharmaceutical industry decision-makers were asked about their opinion on the use of data in the supply chain. The survey yielded the following outcome:

**What do you want to achieve with your supply chain data?**

- Predictive Analytics: 51%
- End-to-end-visibility: 43%
- Ability to save more products: 41%
- Complete overview of all shipping lanes: 40%
- Expedition of the release process for our products: 38%
- Trend analysis: 38%
- Optimization of shipping lanes and routes: 31%
- Validation of our shipping lanes and/or packing materials: 15%

Respondants were asked to select all that apply.

**Is your company implementing the following technical innovations?**

- Supply chain data analytics: 30%
- Customer data analytics: 29%
- Advanced data analytics: 22%
- Cloud computing/big data: 22%
- Machine learning: 21%
- Artificial intelligence: 21%
- Mobile apps for patients & care professionals: 20%
- 3D printing: 20%
- Blockchain-Technologie: 19%
- Industry 4.0 and the Internet of Things: 17%

Save the Date:

Supply Chain Roundtable 2019 – „The Future of Healthcare Logistics in Europe“– Digitization and emerging new business models

November 7, 2019

Bertelsmann Representative Office, Berlin

We look forward to welcoming you to the Bertelsmann Representative Office in Berlin on November 7, 2019. Together with our customers, we will discuss current topics like direct-to-patient models, digitization in the end-to-end supply chain and changes to market structures.

There will no doubt be an interesting discussion about Amazon’s future role in the healthcare market. Be there!

Because space is limited, please register early.

Contact
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Website: https://arvato-supply-chain.com/en/scm-roundtable-2019
We believe that healthcare systems, sales channels and distribution chains undergo constant change to ensure patients derive the greatest benefit from innovative and existing pharmaceuticals and medical products at the most reasonable costs. We support you in making this happen.

Arvato integrates healthcare knowhow, economies of scale and a broad understanding of processes and IT systems to develop bespoke outsourcing solutions. Our clients benefit from seamlessly integrated order-to-cash solutions which connect them to the point of care, bringing them closer to their patients.