

GLOBAL SUPPLY CHAIN SOLUTIONS FOR THE **MEDICAL DEVICES** INDUSTRY



Delivering sustainable supply chain solutions
in life sciences for over 20 years.

ENHANCING YOUR MEDICAL DEVICE SUPPLY CHAIN

DHL EXPERIENCE

With over twenty years of experience providing logistics solutions to the Life Sciences & Healthcare industry, DHL has developed an extensive range of products and capabilities to deliver world class supply chains in conjunction with our customers. DHL Supply Chain has over 4,000 employees dedicated to the unique requirements and regulations of life sciences as well as similar numbers across its other business units (DHL Global Forwarding, DHL Freight, DHL Express) who share the specialism in Life Sciences.

Medical Devices is one of the fastest growing sectors within Life Sciences, driven by innovation, drug device combinations, the increasing affluence in emerging markets driving healthcare spending and the development of cost effective treatments provided through the use of medical devices including implants.



THE MEDICAL DEVICE SUPPLY CHAIN

From a supply chain perspective, Medical Devices are challenging, with broad product ranges (over 20 different market segments), extensive portfolios with 4,000 to 150,000 products (SKU's) and different regulatory classifications. Medical Devices range from syringes and surgical masks to complex MRI scanners and implants; medical consumables to active implantables.

Assessment of Segments

LOGISTICS REQUIREMENTS	COMPLEX		IMPLANTABLE DEVICES & INSTRUMENTS
			DIAGNOSTIC AGENTS & COMBINATION PRODUCTS
			CAPITAL EQUIPMENT, IMAGING & SURGERY
	STANDARD		LONG TERM CARE / DURABLE EQUIPMENT
			CONSUMABLES & DISPOSABLES

With such a broad set of products and requirements, DHL seeks to simplify its approach in offering solutions to Medical Device manufacturers. We have developed a structure of five sub-segments, grouping devices by use, key product characteristics and supply chain requirements.

SPECIALIST CAPABILITIES & PRODUCTS

DHL has created a range of specialist products and capabilities focused on resolving the key challenges of each sub-segment and delivering solutions customized to each customer's requirements whilst meeting regulatory demands. As a result, DHL can create value at implementation and continue to deliver additional benefits through operational excellence and our focus on continuous improvement through our DMAIC process.

In the following pages we will demonstrate our experience based approach to each medical device sub-segment in creating and delivering innovative solutions. We find this approach means we can accelerate our understanding of your current business and future requirements.

IMPLANTABLE DEVICES & INSTRUMENTS



The marketplace for implantable medical devices continues to expand – over 7% year on year growth – and has a current global market value of €61bn.

The products range from dental implants to orthopaedics, from stents to active implantables (e.g. de-fibrillators) as well as some drug device combinations (e.g. drug eluting stents). Characteristics of this sub-sector include: 1) Large product portfolios (up to 100,000 SKU's), particularly in dentistry and orthopaedics; 2) New product introduction to improve patient care and simplify hospital procedures; and 3) Increased focus on additional services such as rotating kits and customer training.

VOICE OF THE CUSTOMER

Consignment Stock

"How can I manage my consignment stock better, it takes a great deal of sales time and I don't think we do a good job"

Unique Identification

"The requirement for unique identification is becoming more important, how can I be sure that my supply chain can cope with future data requirements"

Ordering Timelines

"My customers are requesting later and later cut-offs, how can I accommodate this?"

Inventory Reduction and Rotating Kits

"To reduce inventory in the field, with all the new Products and sizes my sales team are moving to rotating kits, how do I manage the logistics and processes around these"



DHL SOLUTIONS

- DHL provides consignment stock management, based upon field-based teams visiting locations to track inventory. This enables customer feedback to drive stock rotation, track usage and enable earlier billing
- DHL ensures its systems & operations meet regulatory requirements through unique identification number and batch tracking using visibility tools (e.g. supply chain integrator – SCI) and RECALL capabilities
- The drive to later customer orders, urgent deliveries (including within the hospital) has led to end of runway solutions, enabling later order cut-off within a regional model
- Reducing inventory for implantable devices is an increasing focus. As well as offering inventory tracking and visibility to enable better decision making DHL has postponement solutions and METRO stock locations enabling inventory reduction through redeployment and supporting rotating kits

Mini Case Study

Customer Challenge: Top 3 orthopaedic manufacturer seeking scalable country solution. This was to include implants and instruments and, over the relationship, has extended to marketing materials and rotating kits.

DHL Solution: Dedicated low bay picking area, clean areas for kitting, quarantine areas for checking and replenishment of rotating kits and marshalling areas for shipping consolidation.

Customer Benefits: Scalable solution which can manage a range of services including fulfilment, kit building, manufacturing & replenishment, providing visibility so the customer can focus on their core business.

Facts & Figures: 1000m² mezzanine based operation with over 15,000 SKU's, kit build capacity of 50 instrument kits per day and management of over 200 rotating kits.

DIAGNOSTIC AGENTS & COMBINATION PRODUCTS



The Diagnostic Agents and Combination Products segment is currently growing at over 11% CAGR and is expected to reach a global market size of €66bn by 2015.

The sub-sector comprises reagents and consumables used in analysis for diagnosis, as well as drug/medical device combinations. Key characteristics include: 1) mix of high and low value products (high value reagents & low value consumables); 2) temperature control requirements throughout the supply chain including frozen (-20°C, -80°C); 3) Special handling for hazardous materials which make up a proportion of many product portfolios; and 4) Different business models, with revenue generated from purchase/leasing of capital equipment and/or supply of generic or specialist consumables.

VOICE OF THE CUSTOMER

Range of Capabilities

"From spare parts to injectables, I need you to handle frozen, chilled, ambient and hazardous materials with a range of picking strategies"

Compliance & Service Levels

"Compliance is key for the supply chain. There is a requirement for very high service and performance levels, with some deliveries expected same day or within 24hrs"

Cost-effective Supply Chain

"With small orders sizes cost effective shipments are required to ensure product competitiveness. Direct to market solutions are common, as well as high volumes of returns"

Inventory Value Reduction

"I need a supply chain which can help me reduce inventory of spare parts and reagents; packing, kitting and visibility would all help"



DHL SOLUTIONS

- A global network of warehousing and distribution capable of accommodating the requirements of temperature control and hazardous materials
- Regulatory compliance (under our Global Quality program) and operational excellence aligned to a dedicated professional team of experts to ensure a compliant, responsive supply chain, worldwide
- DHL's shared user best-in-class warehouses operate in key geographies worldwide to provide flexibility and cost effective solutions for storage and value added services
- Capability to handle different distribution channels encompassing a broad range of solutions to support customer-specific business models and strategies, delivering inventory reduction and operational responsiveness

Mini Case Study

Customer Challenge: Top 10 manufacturer of Diagnostic Agents seeking shared user warehousing and distribution across Europe, to consolidate inventory and improve service level.

DHL Solution: Shared user warehousing with cold chain and frozen capabilities, within 48hr delivery lead time and value added services (e.g. kitting). Fully integrated WMS for all items including spare parts.

Customer Benefits: Flexible solution which supports storage and picking of reagents, equipment and spare parts including track and trace of transportation, enabling customer to focus on core business.

Facts & Figures: 1,000m² pick-face based operation with -70°C, 2-8°C and 15-25°C temperature zones. Managed transport with national deliveries to over 500 customer / stock points.

CAPITAL EQUIPMENT, IMAGING & SURGERY



The Capital Equipment segment of the Medical Device market is growing at over 7% per annum and the global market will be over €49bn by 2015.

The segment comprises all capital-intensive devices. It is technology driven and requires unique supply chain services, such as spare parts logistics and large equipment delivery and installation. Key requirements of this sub-sector include: 1) Large product size, often including multiple pallets and non-palletised items requiring specialist handling and co-ordinated installation; 2) High product value (in cases over €0.5m per unit); and 3) Diverse aftermarket needs, such as emergency spare part replacement and return for maintenance and upgrade.

VOICE OF THE CUSTOMER

Availability of Products

"High availability of spare parts & consumables and responsiveness are key to ensure my customers are fully operational 24/7"

Responsiveness

"Some contracts with hospitals demand response to spare parts replacement within 2 hours from request"

Proximity to Deal with Emergencies

"Proximity to my customer is a competitive advantage to ensure high availability of our equipment"

Specialist Supply Chain

"High technology products require specialist transportation. Products are very sensitive and coordination for installation is critical for our customers"



DHL SOLUTIONS

- DHL's broad cross-industry expertise brings best fit solutions to the Capital Equipment, Imaging and Surgery marketplace
- Over 100 dedicated warehouses for the Life Sciences & Healthcare industry worldwide, providing the right solution for different supply chain strategies
- Over 900 spare parts logistics centers around the globe, ensuring the delivery of critical parts within hours of request to ensure continuity of operations
- Full range of transportation solutions, from chilled to sensitive cargo, along with specialty handling capability



Mini Case Study

Customer Challenge: Imaging Equipment manufacturer looking to outsource warehousing and transportation in an Emerging Market.

DHL Solution: Single co-ordinated solution, cold chamber for imaging consumables and sensitive equipment, spare parts center, large equipment storage, return & repair center, with nationwide distribution/ collection and temperature/product sensitive transportation.

Customer Benefits: Reduced supply chain costs plus inventory management, a simplified management process with a single provider and a scaleable contract to cover a broad range of services.

Facts & Figures: 3,000m² operation with over 30% temperature controlled storage (chilled & controlled ambient), over 5,000 SKU's and service levels of 4hrs in metropolitan areas and 12hrs countrywide.

CONSUMABLES & LONG TERM CARE EQUIPMENT



Growing at 7.5% since 2010, the Consumables and Disposables segment is expected to reach a global market size of €49bn by 2015, while products for Long Term Treatment is growing at 8% and will reach €47bn by 2015.

With manufacturing and consumption points moving into emerging markets, fierce competition and rising costs, the Consumables and Disposables manufacturers require a lean and dynamic supply chain.

The Long Term Treatment segment comprises hospital equipment, such as patient monitoring and pumps and treatment devices, such as hearing aids. Direct relationships with patients is growing in major markets.

VOICE OF THE CUSTOMER

Availability to drive Competitiveness

"Our products are for one time or temporary use and cost and availability are key to ensure competitiveness"

Multiple Channels to Market

"With multiple channels, from distributor to retailer, hospital to patient, we have a complex and demanding supply chain"

Presence and Patient Interaction

"Equipment for long term treatment requires a strong presence and interaction with patients, in some countries demanding order to cash"

Durable Medical Equipment

"Durable Medical Equipment is vital for hospitals and patients and a reliable supply chain is key to ensure our business can expand"



DHL SOLUTIONS

- A large range of warehousing and transportation solutions suitable for high volume, low value products and specialist services to guarantee stock visibility and patient relationships, DHL can address your needs
- With warehousing solutions ranging from Global Hubs, Regional Distribution Centers, Local Warehousing or METRO Stock points, DHL has the right solution to address specific needs in specific markets
- Order to Cash and Direct to Market distribution enables delivery to hospital and patient. DHL provides its customers with state of the art solutions to support their businesses around the globe
- DHL's full track and trace capabilities, along with integrated Warehouse Management Systems, can provide full stock visibility, helping manufacturers to plan and reduce inventory waste

Mini Case Study

Customer Challenge: A global manufacturer of Consumable and Disposable devices needed to consolidate its European inventory points into a single location, simplifying its supply chain and reducing its total cost.

DHL Solution: Dedicated warehouse in Central Europe, with integrated transportation services and value added services, such as labeling to meet local regulations, delivering services across Europe.

Customer Benefits: Network optimization and cost reduction with a sustainable service level, along with a simplified management structure and customer resources released to focus on growth.

Facts & Figures: 10,000m² operation managing over 4,000 SKU's, reaching more than 1,000 delivery points in 6 countries.

CREATING LASTING VALUE

VALUE PROPOSITION

Integration of supply chain elements enables you to **Focus** on growing your business, relying on your supply chain to meet your specific requirements and the ability to change with your business

Providing near real time **Visibility** of activities and inventory within yours and your customers facilities to enable management decision making

Assurance in your supply chain for both internal stakeholders and customers improves customer retention and provides a platform for business growth and service expansion

Delivery of **Value** in outsourcing your supply chain through reductions in overall business cost and enabling growth, expansion and new product introduction alongside existing business

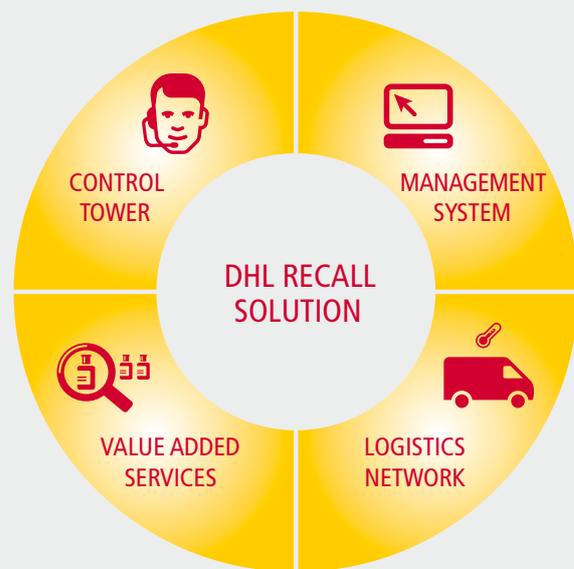
METRO STOCKS



The METRO (Metropolitan) stock solution is based upon moving materials out of the hospital environment (typically rotating instrument kits and slower moving items) to a stock location so they can be same day (1, 2, 4 hr) shipped to where they are required. This improves utilization and reduces inventory in the field.

RECALL

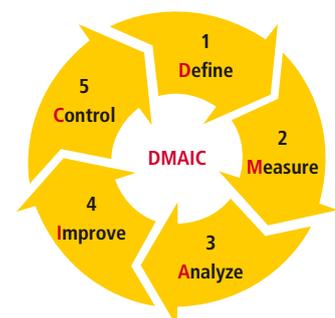
Recalls happen and the DHL solution which is used across other sectors, but customized for life sciences, is based upon four modules covering a control tower & management system, supported by core logistics and value added services from repair and recycling to quality functions.



SUSTAINABLE SUPPLY CHAINS

DHL is committed to delivering sustainable supply chain solutions through our **continuous improvement** programs (DMAIC), based upon Lean and Six Sigma principles to drive service enhancement & cost reduction.

We bring innovation through our knowledge across medical devices, hospitals and pharma supply chains as well as other sectors (such as automotive, consumer, retail and technology).



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