Real time distribution systems: Solving storage and retrieval challenges for FMCGs

For FMCG distribution centres, the most difficult challenge is completing orders that cover high volume, fast moving and fluctuating quantities of goods, many of which are subject to regular promotions and strict use-by-dates. This, coupled with an economic climate that demands greater efficiencies at lower cost, means that more than ever before these networks require sophisticated storage and retrieval systems.

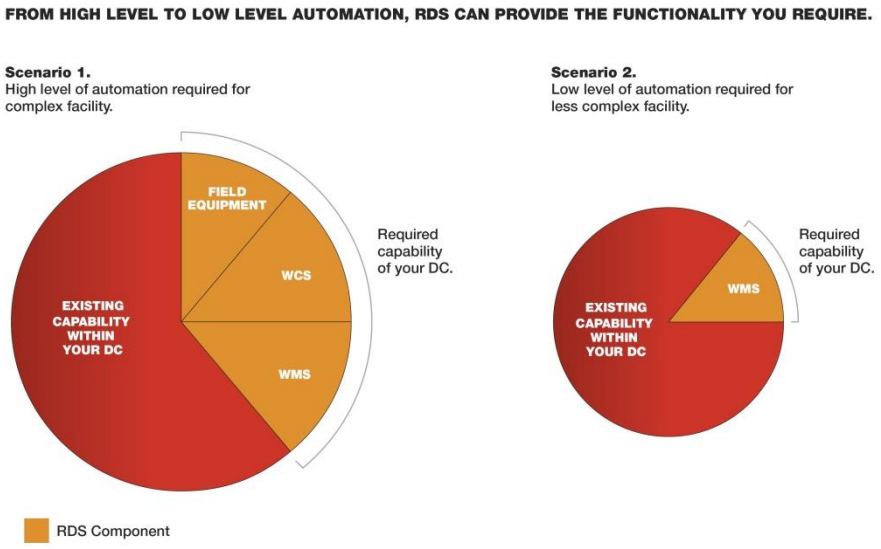
An automated storage and retrieval system (ASRS) can satisfy these rigorous requirements by reducing order fulfilment times and improving order accuracy and efficiency, as well as minimising labour, optimising space, reducing loss and lowering operating costs. In turn, delivery capability improves, as does customer service. Most importantly, ASRSs can offer a return on investment that is often achieved in under two years.

Increasingly, many well-known and loved Australian FMCG brands are turning to ASRSs to grapple with the complex requirements of FMCG distribution centres. Two of Australia's biggest names, Arnott's and Kimberly-Clark recently engaged storage and materials handling specialist, Dexion to design and implement an ASRS solution as part of a broader RDS (Real-time Distribution System) implementation to address their unique storage and retrieval challenges.

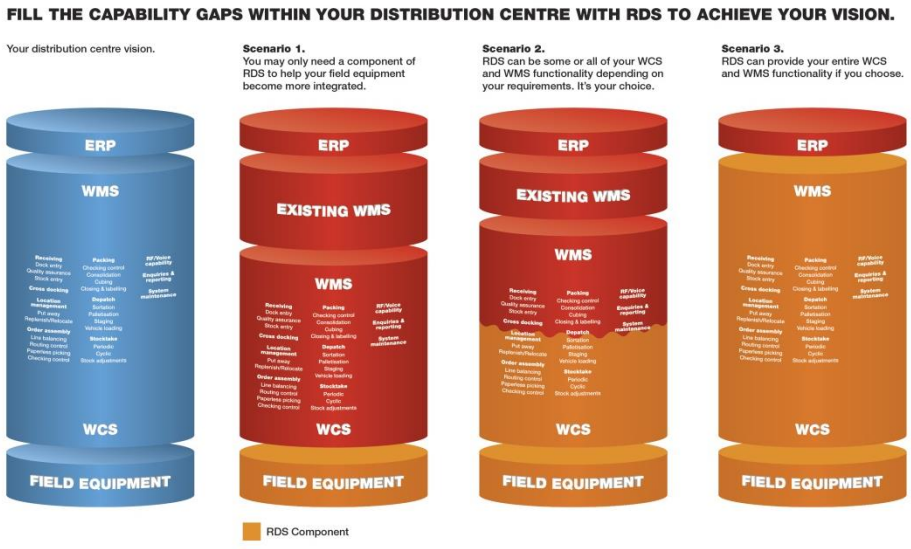
What is Dexion RDS?

The Dexion RDS is a multi-function system that controls the physical and operational aspects of a company's distribution centre from receipt of goods, to processing, storage, order fulfilment and despatch in real time. It bridges the gap between enterprise systems and materials handling equipment and is engineered to complement the customer's existing systems.

RDS provides a single interface to the customer's existing ERP or WMS, aggregating multiple features for the varying functions within the warehouse. RDS is modular in design so it delivers maximum flexibility when building a solution. Dexion is able to configure RDS to fit the task, regardless of how simple or complex the application requires.



The RDS configurations available to users are almost countless, ensuring that each system can be specifically tailored to the user's requirements. Modules can be added as and when new functionality is required.



Dexion's RDS constantly regulates field devices and sensors, host connectivity and data driven rules of materials handling equipment in real time. It simultaneously manages and co-ordinates paperless technologies, such as barcode scanners, weigh scales, pick to light, voice and RF to manage the inventory in a distribution centre.

Dexion's RDS offers a host of benefits to businesses, including:

- Improved allocation of resources, which leads to improved productivity
- Efficient use of capital investment
- Smarter picking controls delivering improved order accuracy (also reducing returns)
- Real time tracking and inventory reporting
- Physical equipment automation
- Staff and equipment performance monitoring
- Lower operating costs

The RDS user interface is web-based and easily accessible from wherever there's an Internet connection. It is user friendly and intuitive. The integrated Command & Control (ICC) module allows the operator to monitor the system's current state and performance, whilst having the mobility to move throughout the centre.

RDS Visual provides an at-a-glance overview of every physical task. Real-time information can be arranged with a point-and-click interface that displays the key tasks operating within a distribution centre.

Kimberly-Clark's award winning distributions system

When FMCG giant Kimberly-Clark Australia (KCA) approached Dexion, the manufacturer of Kleenex® Tissues, Wondersoft® toilet tissue, Viva® paper towel and Huggies® nappies faced a major challenge: how to create a flexible 'buffer' between production and final delivery that would produce cost efficiencies for both KCA and its clients.

Dexion responded to the brief of overhauling KCA's existing distribution network by designing and implementing national distribution centres, complete with ASRS, controlled by RDS, that would reduce distribution costs and inventory holding, as well as improve customer service levels and minimise OH&S risks.

The new system, which integrated with KCA's other systems, redefined the roles of the regional distribution centres to build a network that incorporated end-to-end processes from production through to customer delivery via two national distributions centres based in SA and NSW. Dexion was intimately involved with the building and scoping of the new and improved distribution centre sites, one of which now comprises seven 25-metre high cranes that serve nine levels and 41,000 pallet positions. At full speed, it can pick 190 pallets an hour.

Critically, and in response to the growing demand of national retailers such as Coles and Woolworths for improved 'trackability' of individual orders, the Dexion RDS required full implementation of serial shipping contained code (SSCC) barcode pallet labels across the KCA network. Two special barcodes were developed to ensure that a module of goods could

be correctly and uniquely labelled at every stage of the supply chain, from factory to supermarket shelf and beyond. Today, the SSCC is the central point of Kimberly-Clark's processes, driving the RDS and other technology systems spoked around it.

According to KCA's Mario Carniato, the new system has provided KCA with such a detailed level of information that it's now in a position to offer the client continued and evolving benefits.

"Implementing this system now allows us to be proactive and add more value to our client's businesses," said Carniato.

Dexion played an integral role in helping KCA rewrite the book on FMCG distribution, such that in 2011 KCA won the Award for Excellence in Supply Chain Management and Distribution at The Smart Awards 2011.

Kellogg's, Linfox and Dexion: a new frontier for FMCG distribution centres

Dexion was engaged by Kellogg's to revolutionise its unsustainable distribution centre, which despite accommodating 28,000 pallet positions across 27,000 square metres in size, was almost entirely manually operated.

The leading Australian manufacturer recognised the need to reduce manual involvement and increase automation to meet the growing demands of its customers.

Dexion was engaged to devise a system that could automatically process high demand volumes whilst also achieving high storage density. This involved co-locating a new facility alongside the Kellogg's manufacturing facility. The solution design was complex as it was necessary to maintain the best storage density and maximise volume throughput.

Dexion worked with Linfox and Kellogg's to develop the solution. The system had to incorporate Kellogg's requirements to receive product from the manufacturing facility 24 hours a day, 7 days a week, and to minimise any disruption to manufacturing by the warehouse operations.

Throughout the design process, Dexion worked with Linfox and Kellogg's to identify the best equipment for the solution. This included pallet conveyors, robotics, storage and retrieval systems and IT hardware. The solution saw the new distribution centre holding 32,000 pallets within the automated storage component and the conventional section of the warehouse.

The ASRS enables pallets to be stored in five aisles, six-pallets-deep on either side. Each aisle is serviced by its own automated crane. Each crane has a satellite carriage unit that drives into the racking deposit or pick up pallets. The ASRS can put away up to 90 pallets per hour and retrieve 120 pallets per hour.

The system presented a number of challenges to Dexion. It had to engineer an advanced integrated system for a building designed for conventional warehousing. The system was selected due to its reliability and proven technology, but it's the innovation in the system that

resulted in Kellogg's winning the prestigious Award for Excellence in Supply Chain Managements and Distribution at the inaugural Smart 2007 Awards for Supply Chain Excellence.

A unique feature of the system is a component of Dexion's RDS, which is the command-and-control centre. The RDS drives the ASRS from a logical viewpoint and interfaces with the Linfox warehouse management system, which in turn communicates with the Kellogg's ERP system.

The command-and-control centre provides a pictorial overview of the ASRS operation and enables the operator to see what the system is doing in real time. It is designed to reduce the amount of time taken to resolve a particular issue since the operator is able to see the problems and fix them efficiently.

The results have been overwhelmingly positive – Kellogg's has seen a 10% reduction in pick error rate with the new system and production damage has reduced by 85%. Labour costs have also reduced, with only half the forklift requirements needed in the new facility.

Kellogg's award winning state-of-the-art distribution is a first for the Australian third-party logistics industry, marking a new direction in relationships between customers and third-party logistics providers. It is the first facility where a third-party provider, in this case, Linfox has implemented a fully automated system on behalf of a manufacturing customer. This is important for the Australian manufacturing industry, as manufacturers increasingly recognise where their expertise lie in manufacturing and that logistics should be left to the experts.

To learn more about how RDS works for FMCGs, as well as to view case studies and videos of RDS in action, visit Dexion.

Contact

For more information contact Dexion:

Australia	www.dexion.com.au	1800 100 050
New Zealand	www.dexion.co.nz	0800 339 466
Asia	www.dexion.biz	+60 3 5520 6000
China	www.dexion-china.com	+86 21 6879 4410