

Technological Innovations in Logistics and the Extended Supply Chain

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Technology is about new things, but technologies have a lifecycle too, and sometimes it's useful to stand back and look at which technologies are the most beneficial. Although it has almost become cliché for supply chain managers to speak in three letter acronyms (TLAs) like WMS, TMS, and DRP, most of these applications are over their heyday, and some new ones are popping up with more frequency.

The traditional list of supply chain management technologies includes warehouses management (WMS) systems, transportation management (TMS) systems, and distribution requirements planning (DRP) systems. However, most large companies that need a WMS have already implemented it by now, and small companies are now shopping for largely less expensive, off-the-shelf WMS capabilities, so the cost has come down and the decision is attracting less senior management attention because the price tag is lower (it's all about execution). Similarly, most companies that need a TMS have already implemented it. DRP logic has become embedded in most ERP systems' order fulfillment capabilities, so is largely transparent to users today.

Which ones are coming up, and what should you do about it? Solutions like RFID

and GPS still seem to top the list of request and questions that come across my desk and conference sessions. Demand planning and pricing are also getting a lot of attention.

- RFID is at the early stages of its lifecycle, so there are lots of questions about it. The easy "slap-and-ship" applications are in fairly wide use by now. Ironically, the greatest number of questions about RFID concern specialty applications where it is hard to implement because it is often in these environments where it can generate the most value. Often these situations involve interference and readability problems, such as occur in the tracking and measurement of items surrounded by liquids and metals, or even the transport of the liquids or metals themselves.

- Demand planning - which is the integrated set of features related to advanced planning and scheduling (APS) and advanced planning optimization (APO) - also pops up a lot since companies (large ones, especially) are still migrating from a supply push to a demand pull paradigm. Implementing global demand planning solutions is challenging - more so politically than economically or technically. Multiple business units need to agree on the many details of procedure, from the high view such as how

to structure sales and operations planning so that the output feeds into the demand planning system, down to the details, such as which format to use for labeling goods that move through common distribution centers.

- Pricing is a third area that is attracting great interest. Sophisticated solutions such as yield management systems, load planning, and revenue management systems can directly increase profitability in global multinationals through local and segment-specific pricing decisions. These require a good knowledge of customer-specific profitability to ensure that the answers they generate are accurate, so activity-based costing is assumed to underlie the pricing applications. Unfortunately, activity-based costing is hard to do, so many companies still have very crude approaches to it or don't do it at all.

If you have an ERP, check with your provider to see what modules they offer in these areas. Then compare features and prices with "best of breed" options that operate independently or plug into the ERP. If a software roll-out requires more retraining than you can bear, or if you just want basic functionality, you can build a custom solution in Excel and "bolt it on" to the ERP backbone. Excel has far more capabilities than most people even know about, you may be able to rapidly improve performance at low cost by developing a custom tool that everyone in the organization can operate without retraining. A good consultant can develop Excel-based tools for both planning and execution, including shipment rating, customer-specific pricing, cross-docking, vehicle scheduling, routing, revenue management, and custom reporting.

Whatever level of technology you decide you want, finding the right fit for your organization is the most important part of the decision. **D**

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