Five Reasons Why Generic ERP Doesn't Work for Printing and Packaging

An Epicor and Kodak White Paper

Incorporating Business Technology by Kodak

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Executive Overview

Many printing and packaging companies, over the years, have installed and tried to implement generic Enterprise Resource Planning (ERP) systems. A good idea, it would seem, because ERP has helped thousands of companies around the world improve operations, cut costs, and better manage resources to deliver superior customer service and profitable growth.

If the question is "What system tools can help a printing and packaging company improve customer service, control costs, optimize use of resources, communicate internally and externally, and position the company for growth and success?", the answer is definitely ERP. But it has to be ERP that is designed and built to accommodate the specific needs of the printing and packaging industry.

And don't think that modified, adapted, or enhanced ERP will work. The differences and needs of printing and packaging are so fundamental to the basic structure of how ERP works that modification and work-arounds will not suffice.

Printing and packaging companies should look for an ERP system that is designed specifically for their industry with estimating, product and job structuring, scheduling, and material control capabilities that are properly attuned to the specifics of their world. These fundamental capabilities, however, should be tightly integrated with industry-leading customer relationship management (CRM), workflow, quality, and supply chain management applications for a comprehensive enterprise solution.

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ERP Bills and Routings

ERP consists of basic operational applications for inventory management, production, scheduling and control, planning, activity control (purchasing, customer orders), and related accounting, financial management, and support. The heart of the system is the planning 'stack'—a set of applications that support sales and operations planning (long term), master scheduling (medium term), and requirements planning (short term). Execution applications focus on material (inventory) control, production control, and purchasing.

Much of what the system does depends on basic definitions (called product data) that define items, bills of materials, and routings. You can see already that ERP terminology is manufacturing oriented, not printing. And that's really at the heart of the problem. Generic ERP is designed for a manufacturing environment where individual pieces or quantities of material are put together to make products.

The original ERP design was developed for a typical 'discrete' manufacturing company—one that works with individual pieces and parts. Later variations were developed for 'process' industries like pharmaceutical and chemicals where materials and products are liquids or powders that are measured (rather than counted). Still, the orientation is to some number of parts or materials coming together to make one (or a defined quantity) of a specific product.

The bill of materials (BOM) defines this relationship and, in most cases the user is expected to pre-define the BOM then forecast demand, release work orders, and account for quantities of the item made and the components that go into it. That's simply not the way a typical printer does business. Commercial printers will often define the job in order to prepare the bid, and then run the job shortly thereafter if the bid effort is successful. A 'standard' job that is repeated frequently is a rarity. Repetitive business is more common in labeling and packaging, so this organization is not a major concern in that style of business. Other concerns listed below, are important to label and packaging printers, though.

There is a segment of manufacturing that does operate more like a commercial printer—one-off jobs that are defined and run once, unlikely to be repeated. That segment is called a 'job shop' and there are a small number of ERP software products keyed to this industry segment. Nevertheless, even job shop software suffers from the manufacturing-centric, pieces-into-products orientation that doesn't fit the printing and packaging industry.

Picture this: to enter a print job into a generic ERP system, first define the 'items'. Create records for the finished product and each component—paper, ink, plates, etc. Now link them in a BOM and specify the quantity of each component required to make one end product. Already it's complicated. Each end product (page, carton, flier) probably contains one sheet of paper but you have to allow for set-up and overrun waste. And the paper may come in large sheets to be printed 2-up or 4-up or perhaps even a fraction of a sheet because you want to lay-up multiple jobs on a single sheet/run. How

much ink of each color (in ounces, milliliters, or pounds) ends up on each page, including allowance for set-up, waste, clean-up loss, etc.? These are not trivial questions when trying to force-fit printing into a standard manufacturing BOM. This all takes time, and it doesn't help at all with imposition, make-ready or run time calculations, or any of the other details that make printing different from assembling a toaster or machining a casting.

ERP Estimating

Most printing work is highly competitive. Price, turnaround and customer service are often the winning attributes that mean the difference between a successful, growing printing business and a struggle for survival. The ability to quickly generate an accurate estimate is a key capability in all three areas. The estimate must be detailed and accurate to properly price the bid—so that you have the best opportunity to win the business and will not be surprised by unanticipated costs later. Speed in developing the estimate is an important part of turnaround, and a significant contributor to responsiveness (a key factor in customer service).

An estimating system for printing and packaging must handle imposition, folds, and the ability to automatically create job plans including material estimates (e.g., ink and varnish coverage, grip allowances, paper usage per section, etc.), and make-ready and run times.

The estimating process should include wizards to simplify bid preparation, and the ability to call in saved examples ('standard' jobs, past estimates, previously completed jobs) to use as a template or starting point for new estimates.

All this adds up to speed and accuracy. You want to be able to prepare bids and estimates the way you would do it manually, but with computer-aided efficiency. In addition, you should have the ability to try substitute material and run parameters (different paper weight or board specification, different press, etc.) to test how costs would change—to identify the best strategy for meeting the customer's needs and securing profitable business. Once the order is signed, the estimate specifications should be electronically transferred to the scheduling and management systems for execution—no re-keying and no risk of errors in transferring the specs into production.

ERP Scheduling

As mentioned earlier, generic ERP assumes that one bill of materials identifies the components needed to make one product. Job scheduling and tracking work the same way—one job makes one product. That's not always the case in printing and packaging.

Quite often, one press run will include several 'products' run at once that are cut into separate items at a later time. While there may be elaborate and cumbersome work-arounds to accommodate this situation in generic ERP, it is not simple and it is not convenient because it is not a 'natural' situation from the perspective of the system's design.

The opposite is also true. When printing a job that involves several components (pages, covers, sections on different stock, some color pages and one color sections), ERP will force separate work orders for each part of the job plus another (or several others) to assemble the pieces into the final product. Each work order involves a separate definition, release, transactions, and completion. If some of those press runs include parts of multiple jobs, that complicates it even further.

A system designed for printing and packaging will view these situations as everyday business, allowing easy configuration of the items or pages on the lay-out and routine scheduling of the make-ready, press run, cutting, and finishing. Once the job is complete to the point that easily identified output products are produced, straightforward inventory control, binding, packaging and shipping processes apply.

ERP Materials and Specifications

Typical discrete manufacturing deals in whole units—one frame plus two wheels make a bicycle. Process manufacturing works with measured quantities—325 milligrams of active ingredient plus 850 milligrams of filler make an aspirin. Neither style of generic ERP has the capability to handle material characteristics like paper specifications, sheet size, ink coverage, Web width, conversion of sheet to weight and back, PANTONE® colors…the list goes on.

Generic ERP lacks the ability to gracefully handle over-runs and under-runs. There are no built-in calculators for determining make-ready and run times. Turning signatures into press runs, bindery jobs, and end products is problematic. And pricing calculations that recognize these characteristics do not exist in generic ERP.

ERP Doesn't Understand Printing and Packaging

It should be clear that generic ERP is ill-suited to support the basic needs of the printing and packaging industry. That being the case, you can't expect the supplier, its agents, representatives, business partners, or distributors to understand your needs. If you were to purchase one of these generic packages, the sales team might also propose extensive modifications (at considerable cost and an extended implementation time to allow the programmers to get it done) but it is doubtful that the end result would be as complete and appropriate as a package that was designed for your industry from the beginning, by people who truly understand your needs.

Don't forget, though, ERP is the tool for effectively managing the business and delivering outstanding customer service, responsiveness, cost control, efficiency, and visibility throughout the supply chain. The functions of a first-class ERP system including inventory control, production planning and scheduling, financial management, customer service and purchasing are as important to the printing or packaging manufacturer as they are to manufacturers in other industrial sectors. They, too, should look for suppliers that understand their particular industry and have built functions into the software that support their specific needs.

ERP (of any variety) should be built on a 100% service-oriented architecture (SOA) platform and include workflow, CRM, lean manufacturing, and supply chain capabilities. Using SOA technology and Web services, the system should be designed to easily connect with other applications—other apps in-house and with partners, suppliers, customers, and business partners outside of the enterprise. For printing and packaging, this includes Job Definition Format (JDF) connectivity. SOA also enables the system to be customized without compromising the internal code (personalize the function and displays without modifying the programs).

Here's one final word about ERP packages. The functionality of today's ERP is so broad and comprehensive that it can't be duplicated to any usable extent in custom code. Even the largest companies in the world, the only ones that could afford the millions of dollars it would take to develop ERP functionality from scratch, buy and use packaged ERP products. Software development and support are not the core competence of a manufacturer or printer. Packaged systems offer exceptional functionality at a price that is far less than custom development. Similarly, ongoing maintenance and support costs are much more reasonable since they are shared among a large community of users. Software developers make it their business to incorporate the best and latest technology and industry best practices in their systems to provide exceptional value to their customers.

Epicor and Kodak® – Names You Can Trust

A company buys and implements ERP to become an essential tool for managing the business. The system must be well supported by suppliers that are very knowledgeable in the business and financially stable. For printing and packaging ERP, it would be hard to imagine a better team than Epicor and Kodak. Epicor is truly a world-class ERP supplier with thousands of customer companies enjoying industry-leading functionality and support. Kodak is world renowned as the premiere imaging company and leading supplier of printing solutions and products. Epicor and Kodak have partnered to offer the Epicor solution for printing and packaging including *Kodak UpFront* Production Planning Software, *Kodak Preps* Imposition Software, and *Kodak Prinergy* Workflow integrated to Epicor CRM, lean manufacturing, and supply chain solutions. Epicor solutions are 100% SOA and include Service Connect and Business Link for connectivity with other systems. Contact Epicor for additional information.

About Epicor

Epicor Software (NASDAQ: EPIC) is a global leader delivering business software solutions to the manufacturing, distribution, retail, hospitality and services industries. With 20,000 customers in over 150 countries, Epicor provides integrated enterprise resource planning (ERP), customer relationship management (CRM), supply chain management (SCM) and enterprise retail software solutions that enable companies to drive increased efficiency and improve profitability. Founded in 1984, Epicor celebrates 25 years of technology innovation delivering business solutions that provide the scalability and flexibility businesses need to build competitive advantage. Epicor provides a comprehensive range of services with a single point of accountability that promotes rapid return on investment and low total cost of ownership, whether operating business on a local, regional or global scale. The Company's worldwide headquarters are located in Irvine, California with offices and affiliates around the world. For more information, visit www.epicor.com.

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