DIGITAL SPECIALTY PRINTING
POWER APPEARANCE

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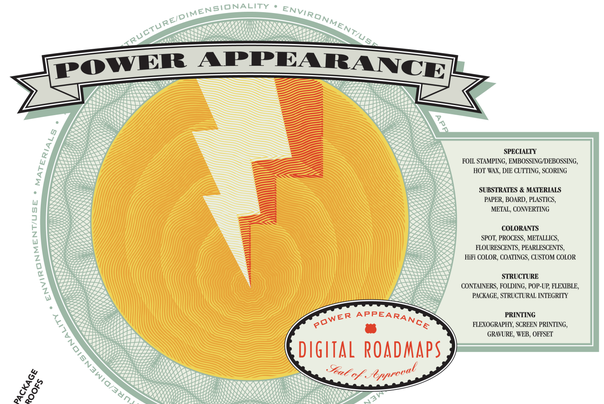

WHAT IS DIGITAL SPECIALTY PRINTING?

Digital specialty printing is the use of computer-based processes to specify and manufacture printed products such as packages, point-of-purchase displays, art reproductions, covers, and greeting cards.

Within five years, two-thirds of specialty printing and packaging jobs will be digital—a significant development considering that specialty printing, packaging and converting account for about one third of graphic arts revenues. Benefits of getting digital include *power appearance*, and large (as much as 5-10 times) improvements performance measured in service level, cycle time reduction, and lower processing costs.

Since specialty printing processes are complex, the key to digital workflow is a standardized set-up procedure that manages these process complexities.

This infomap depicts a digital workflow for digital specialty printing including set-up considerations. The process begins when the originator and producer(s) enter into a service agreement, then set-up for the specialty process. It continues with content development and prepress, then cascades through a chain of printing, special effects, and finishing steps until the customer requirements has been fulfilled.

Power Appearance Begins with Set-up

Complex specialty printing can be specified and produced digitally across networks if companies follow standardized procedures to set-up the process and to synchronize their processing environments.

This "standard" set-up procedure must take into consideration such things as:

Product structure & in-service characteristics—for example; structural integrity of a package or point-of-purchase display, consistent appearance from batch to batch, as well as under varying viewing conditions. Also, there are health, safety, and environmental issues.

Colorants beyond CMYK—for example; named colors, special colorants including metallics and fluorescents, and high fidelity color processes. Printing with 8-16 colors is not uncommon.

Unique substrates & materials—special issues when printing and converting paperboard, metals, plastics, as well as other rigid and flexible materials.

Diverse printing methods—including lithography, gravure, flexography, screen, and digital printing processes.

Dimensional printing and special graphic effects—such as embossing, debossing, die cutting, scoring, foil stamping, and other finishing processes.

The simplified digital specialty printing process depicted here takes place between two businesses, an originator and a full-service specialty printer/converter. (Of course, specialty production functions are often performed by separate businesses.) The entire service cycle takes place across networks. The workflow includes the following stages:

1. Demand

The digital specialty printing process begins when the originator researches capabilities of providers on the Internet.

2. Agreement

The agreement process starts with requests for bids and estimates, and continues until an agreement is executed. Service agreements define obligations between parties—what will be done, by whom, when and where, and with what resources and workflow.

3. Job Standards

Industry standards apply wherever possible to orchestrate business transactions, content formats, media process parameters, and digital communications. Job-specific conventions manage aspects of the process that fall outside industry standards.

4. Set-up

Set-up steps configure customer and supplier environments to the requirements of the service agreement. Business, media, content and communications procedures must be synchronized. Before the job begins, set-up and confirmation procedures demonstrate this. Later on, prior to individual tasks, set-up steps tailor the resources.

5. Design

In specialty printing, design takes on a broader definition. It includes environment, product structure and use, imagery, graphics, and special considerations for printing and specialty processes, materials, and finishing. Imagery and content is developed digitally. Proofs are (transmitted and) printed digitally as needed. In addition, design may need to include the adaptation of legacy materials for re-use or reprinting. The result of content development and design is a digital master.

6. Digital masters

A digital master contains all content and meta information needed to support an intended range of outputs. Digital masters are managed through digital libraries. Digital libraries provide the content base to support reprints of packages and other specialty printing products.

7. Preflight

Preflight ensures the integrity of information and material flows between functions and organizations. It is a structural requirement for workflows across network. Preflight is performed before and following transfer to make sure that agreed service parameters have been met.

8. Digital communications

Jobs flow electronically across the NET—the emerging digital communications infrastructure based on intranet, extranet, and Internet protocols. Transfers may be point-to-point, or multi-point-to-mulitpoint.

9. Digital job management

Workflows are distributed and highly automated. Business transaction processing is integrated with content and media processes and driven from servers. Customers have 7 day/24 hour access to their data as well as status information.

10. Digital prepress

Prepress workflow is driven from servers. Functions are pipelined. Some are run in parallel to increase throughput. Tasks include element substitutions, element editing and correction, assembly, ripping, trapping, imposition, and proofing. Color managed page proofs and imposition proofs are transmitted and (remotely) printed digitally as needed. The complex chain of output processes (#11 through #16 below) is driven from this digital stream. While process set-ups may occur in parallel, printing, specialty printing, and finishing steps occur in a relatively fixed sequence.

11. Conversion

Conversion prepares materials for printing and specialty processes.

12. Direct-to conventional printing press

Digital workflow will bypass use of film in making plates for lithography, gravure, flexography, or screen printing. Direct-to-plate/cylinder/screen images plates off-line, or near-line. Direct-to-press images plates/cylinders/screens on press.

13. Specialty printing

Specialty graphics processes are typically applied after conventional printing is completed. Even off-line processes are coordinated digitally.

14. Foil stamping & embossing

Dimensional processes are applied to the full sheet after special graphics effects.

15. Scoring & die cutting

Processes that cut the substrate occur after printing and dimensional effects.

16. Finishing

Finishing is the last step in the output chain.

17. Validation

Validation occurs at each step of the output chain. It establishes successful completion of a task or process. Across networks, validation becomes remote digital proofing—both soft proofing on screen and digital printing.

18. Acceptance

Delivery of the final output fulfills the service agreement, and triggers final payments and disposition activities.

CALL TO ACTION

1. **Get digital.**
2. **Get networked.**
3. **Re-engineer your specialty processes for specification and delivery across networks.**
4. **Align with technology partners you can trust and who will be there when you need them.**

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