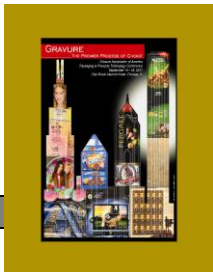


Gravure...

The Premier Process of Choice

Bob Kikkert

Senior Manager, Packaging Services



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Agenda

- Industry Alignment
- Cylinder Engraving
- Inks
- Quality



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Industry Alignment to meet CPG Needs

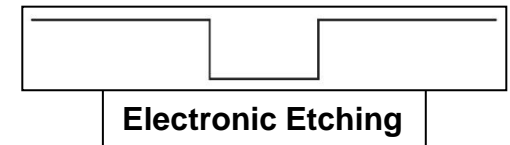
- Improved technology over the past 20 years
- Narrow web for pressure sensitive labels and low volume production runs
- Board presses with in-line die-cutters
 - Rotary & Platen
- Wide web film presses with capabilities to laminate multiple layers in one pass
- Newer presses designed to have quick change over capabilities
 - Further perfected by press crews
- Ability to run various varnishes and finishes
- Continuing to re-invest itself with numerous new presses installed within the past 10 years



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Support Services – Cylinder Engraving

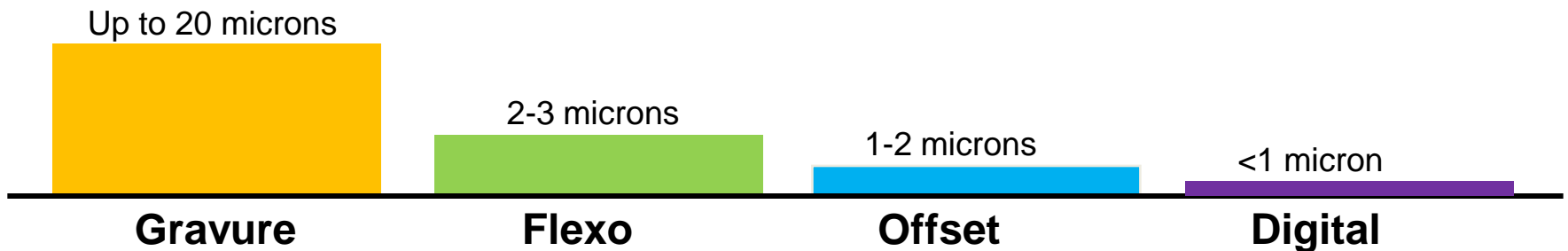
- 1940's-1970's: Chemical Etching
 - Carbon tissue acid etching and direct transfer methods
 - Environmental and safety concerns
- 1970's-present: Electromechanical Etching (Ohio & Helio)
 - Introduction of digital workstations
 - Diamond tipped stylus engraves images into copper cylinder
 - Immurgence of Trans Technologies
 - Economical restrictions
- 1990's-present: Laser Systems
 - High quality imaging systems
 - Direct Laser - Zinc
 - Scheper's
 - Direct Laser into Copper
 - Varying cell width's & depth's offer a strong advantage
 - Faster speed-to-market, reduced cycle-time & improved reproduction



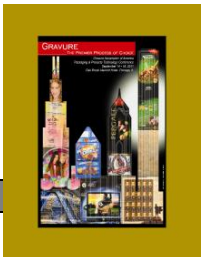
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Inks

- Reduction of drags, slurs & streaks to improve ink laydown
- Metallic coverage is determined by ink thickness
 - The thicker the ink film, the more brilliant the metallic coverage
 - Print processes lay down the following ink film thicknesses



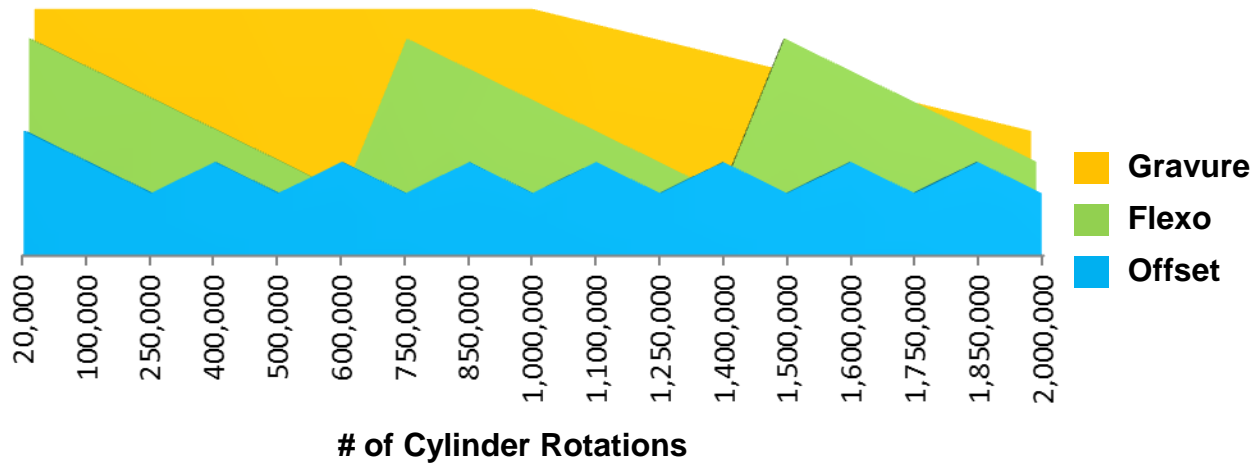
- Consumer packaging companies often opt to use gravure printing to achieve more brilliant metallic coverage even when quantities do not dictate using gravure



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Quality

- Each print method is a process of deteriorating quality
 - Gravure is the superior print process



- Initial set-up costs for Gravure are higher, but the longevity of the cylinder life far out-weighs the plate & sleeve life of other print processes
- Upfront charges for competitive technologies are less expensive, however, with longer print runs and a need to be sustainable... Gravure becomes the print method of choice



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Questions???



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