Printing Industry

One of the Biggest and Fastest Growing Sector in India

Introduction

Printing plays a significant role in the India. Printing, means of producing reproductions of written material or images in multiple copies. The printing industry includes establishments primarily engaged in printing text and images on to paper, metal, glass, and some apparel and other materials. Printing can be divided into three distinct stages: prepress, the preparation of materials for printing; press or output, the actual printing process; and post press or finishing, the folding, binding, and trimming of printed sheets into their final form. Printing and Print – Packaging industry in India is growing; people are taking keen interest in this key industry now.
The printing industry, like many other industries, continues to undergo technological changes, as computers and technology alter the manner in which work is performed. Many of the processes that were once done by hand are becoming more automated, and technology's influence can be seen in all three stages of printing. The most notable changes have occurred in the prepress stage. Instead of cutting and pasting articles by hand, workers now produce entire publications on a computer, complete with artwork and graphics. The printing industry is also taking on new tasks that provide further value for customers. This means customers can now have their finished products labeled, packaged, and shipped directly by printing companies.
Flexography uses printing plates made of rubber or plastic. It is a high-speed process that uses fast-drying inks and can be used on a variety of materials, including labels, shopping bags, milk cartons, and corrugated boxes.

Printing technology is continuing to develop for offset processes, but the major developments are taking place in digital printing – and particularly inkjet, which is enjoying major investments in R&D on print heads, inks, and finishing systems. There are also significant developments in enabling workflow technology – for all processes and substrates, with much emphasis on paper to improve the quality of water-based inkjet printing.
The print industry, in fact, is not only environmentally friendly but is one of the most sustainable industries around. The industry makes tremendous investments in applying renewable energy sources and creating environmentally friendly supplies.

On-demand printing services allow organizations to order print resources in a piecemeal fashion. On one hand, this means that less paper is wasted. On the other hand, on-demand printing is a great solution for companies and associations that must frequently update and send content to satellite locations and remote offices or stores. Furthermore, on-demand printing services enable firms to order exactly what they need and deliver it overnight without shipping materials themselves.
Demand is driven by advertising and product needs of business customers. The profitability of individual companies is closely linked to effective sales operations. Large companies have scale advantages in buying materials like paper and ink, serving large customers with regional or national needs, and making efficient use of expensive presses.

The publishing printing market size is supposed to grow from INR 20,859 crore in 2012 to 27,607 crore in 2017 with population increase, rising literacy rates and a growing economy. The Indian Printing Industry, growing at a rate of 12% per annum, comprises more than 250,000 big, small and medium printers. The current annual turnover of the industry is more than INR 50,000 crores (USD 11 Billion)
This book majorly deals with typographic technology, photo scanning systems, sequence of steps in the printing processes, size and scope of the printing industry, high volume printing technologies for the production of polymer electronic structures, inking system, film high contrast printing, principle of Plano graphic printing, modern printing process, ink jet etc.

The book contains the latest printing processes like web, gravure, flexo, security and offset printing. This book is an invaluable resource for new entrants, technicians, craftsmen and executives working with printing industries.
1. The Beginning of Printing
Typographic Technology
Hand composition
Linotype
Monotype
Ludlow
Photo-scanning systems
Systems components
Digital typesetting
Scanning and laser systems
Basic classification of typefaces
Planning a Page
Type Measurement

2. The Printing Industry
Introduction
Development of Ideographs
Development of Phonetic Symbols
Printing Technology
Sequence of Steps in the Printing Processes
Size and Scope of the Printing Industry
Commercial Printing
Special Purpose Printing
In-Plant Printing
Preparing for a Career in Printing
Career Advancement

3. Printing Press
Press Development
Understanding Offset Press Operation
Feeding Unit
The Registration Unit
Multicolor Sheet-Fed Presses
The Press Console
Components of a Web Press
Towards Total Automation

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4. High Volume Printing Technologies for the production of Polymer Electronic Structures

Why Printing in Polymer Electronics?
Fundamental Concepts for the Production of Polymer Electronics
Printing Technologies
State of the Art in Printing Electronics
Challenges of Printing Polytronics
Conclusion

5. Sheet-Fed Offset Machines
Names of the machines
Mechanical features
Functions of the blower foot
Sheet insertion and transfer
Gripper designs
Inking system
Distribution system
Wash-up device
Adjustment of rollers
Maintenance of rollers
Different dampening systems
Conventional dampening system
Cleaning of dampeners
Brush feed dampening system
Plate cylinder
Blanket cylinder
Impression cylinder
Adjustment of cylinders
Delivery mechanism
Qualities of a good delivery system
Attachments on the delivery part (board)
Miscellaneous operations

6. Printing Processing
Printing Exposing
7. Film High contrast Printing
Tonal Deletion
Tone Line
Making the Separations
Printing Separations
Bas Relief
Colour Manipulations
Sandwiching
Standard Negatives
Data Sheets
Evaluating Contact Sheets
Evaluating for Colour Filtration
Fine Colour Printing
Controlling Colour Materials
The New High-Speed Film
Colour Transparency Films
Printing, Colour Positives
Test Prints
Processing Ektachrome 14 Paper
Processing Cibachrome A-11
8. Origin of Planography

Principle of Planographic Printing
Direct printing process
Materials, Tools and Equipments
Dampening cloth
Vaseline

9. Offset Press

Dampening Solutions
Feeding & Registering system
The delivery system
Mabeg feeder
Sheet Detection
Press Make ready, and Operation
Feedboard setting
Setting the sheet path
Fitting the plate
Ink preparation
Multicolour printing
The multicolour press
The Perfector Press
Infra-Red Drying on Web-Offset
Offset printing Machines
Business Form Production

10. Paper Technology
The History of Paper
From plant to paper:
Europe's first paper mill
America's first paper mill
Paper Specification
Paper faults During Printing
Make Ready Procedure
Types of Paper
Paper Requirements For Offset Printing
Testing the properties which effect print quality
Types of Papers
Beating and Hydration
Requirements for Printability of Paper
Printing & Paper Troubles & How to Overcome Problems
The Indian Paper Industry
International Paper Sizes
Paper Calculation
Estimate Paper Need

11. Modern Printing Process
Ink Zet
Film Plotting Machine
Computer to Plate Technology (CTP)
Computer To Plate Scanners
Digital Colour Presses & Computer to Press
Making digital plate production cheaper
The Digital Offset Color Revolution: E-Print 1000
Market forces
Quality & Productivity
Anilox Offset
More Economical For Frequent Partial Editions with high Colour Content
Waterless Anilox Offset
Produce a complete newspaper by computer software

12. Pad Printing Application

13. Gravure Printing
The Gravure Industry
Basic Gravure Concepts
Cylinder Construction and Preparation
Copper Plating and Polishing
Gravure Presswork
Cylinder and Doctor Blade Considerations
Impression Rollers
Trends in Gravure
14. Web Offset Machines
Design of web machines
Reel stand unit
Main parts of printing unit
Sequence of colours in printing
Quality Control in Printing
Dampening solution

15. The Flexographic Printing

16. Security Printing
Credit cards
Caliper and dimensions
Hologram
Numbering with Micr Ink on Rotary Presses
17. Bar Coding
Type of Bar Code and Description
Continuous Codes
Letter Press
Glossary-Bar Code Terminology
Some Major Bar Codes

18. Offset Printing Machines
Niir Project Consultancy Services (NPCS) can provide Process Technology Book on Printing Technology

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- Industry / trade associations
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- Alcoholic And Non Alcoholic Beverages, Drinks
- Adhesives, Industrial Adhesive, Sealants, Glues, Gum & Resin
- Activated Carbon & Activated Charcoal
- Aluminium And Aluminium Extrusion Profiles & Sections,
- Bio-fertilizers And Biotechnology
- Breakfast Snacks And Cereal Food
- Bicycle Tyres & Tubes, Bicycle Parts, Bicycle Assembling
○ Bamboo And Cane Based Projects
○ Building Materials And Construction Projects
○ Biodegradable & Bioplastic Based Projects
○ Chemicals (Organic And Inorganic)
○ Confectionery, Bakery/Baking And Other Food
○ Cereal Processing
○ Coconut And Coconut Based Products
○ Cold Storage For Fruits & Vegetables
○ Coal & Coal Byproduct
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- Copper & Copper Based Projects
- Dairy/Milk Processing
- Disinfectants, Pesticides, Insecticides, Mosquito Repellents
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- Essential Oils, Oils & Fats And Allied
- Engineering Goods
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- Fast Moving Consumer Goods
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- Ginger & Ginger Based Projects
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- Hospital Based Projects
- Herbal Based Projects
- Inks, Stationery And Export Industries
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- Jute & Jute Based Products
- Leather And Leather Based Projects
- Leisure & Entertainment Based Projects
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- Minerals And Minerals
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- Organic Farming, Neem Products Etc.
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- Plastic, PVC, PET, HDPE, LDPE Etc.
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- Soaps And Detergents
- Stationary Products
- Spices And Snacks Food
- Steel & Steel Products
- Textile Auxiliary And Chemicals
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- Textiles And Readymade Garments
- Waste Management & Recycling
- Wood & Wood Products
- Water Industry (Packaged Drinking Water & Mineral Water)
- Wire & Cable
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