

The background of the entire slide is a close-up, high-angle view of numerous water bubbles of various sizes rising through clear water. The lighting is bright, creating highlights on the surfaces of the bubbles and a deep blue color in the water.

Where the inkjet journey starts

A journey through the development of water-based digital inkjet

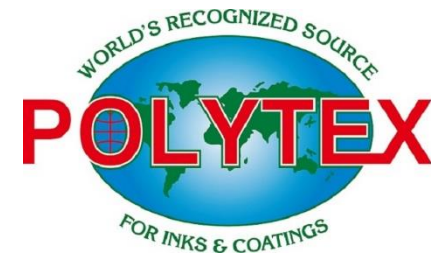
Polytex Environmental Inks B.V.

Ludo Hof



Where the inkjet journey starts

- Introduction Polytex
- What is digital printing, what is happening in the world?
- Why digital printing?
- Different kind of 'digital applications'; techniques
- The use of a primer
- The base of a waterbased ink, coating or primer
- The (no) need for a topcoat

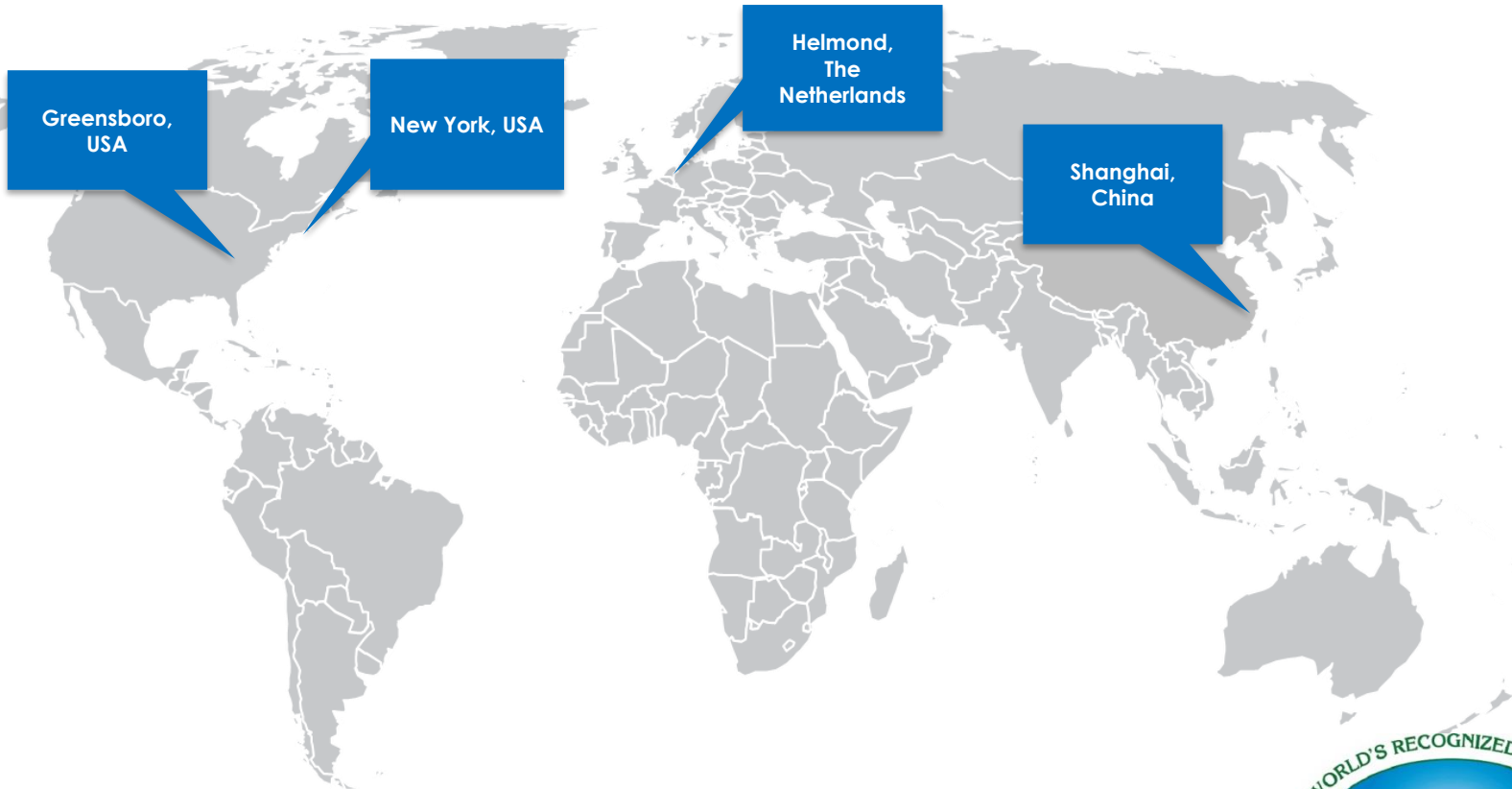


Introduction Polytex

- Polytex as producer of printing inks & coatings is NOT a chemical plant
We use chemicals, but:
- What we do is the mixing and grinding of the raw materials in the right proportion and in the right way to create the right product for use
- Producer of (mainly) waterbased inks & coatings in different applications: flexo, gravure, rotary screen
- Also energy curable systems
 - UV inks and coatings
 - EB inks and coatings
- Until August 2014 a family owned business
- With facilities over the northern hemisphere



Introduction Polytex



Greensboro,
USA

New York, USA

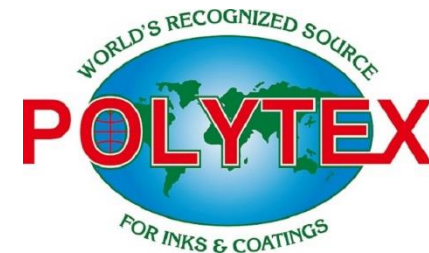
Helmond,
The
Netherlands

Shanghai,
China



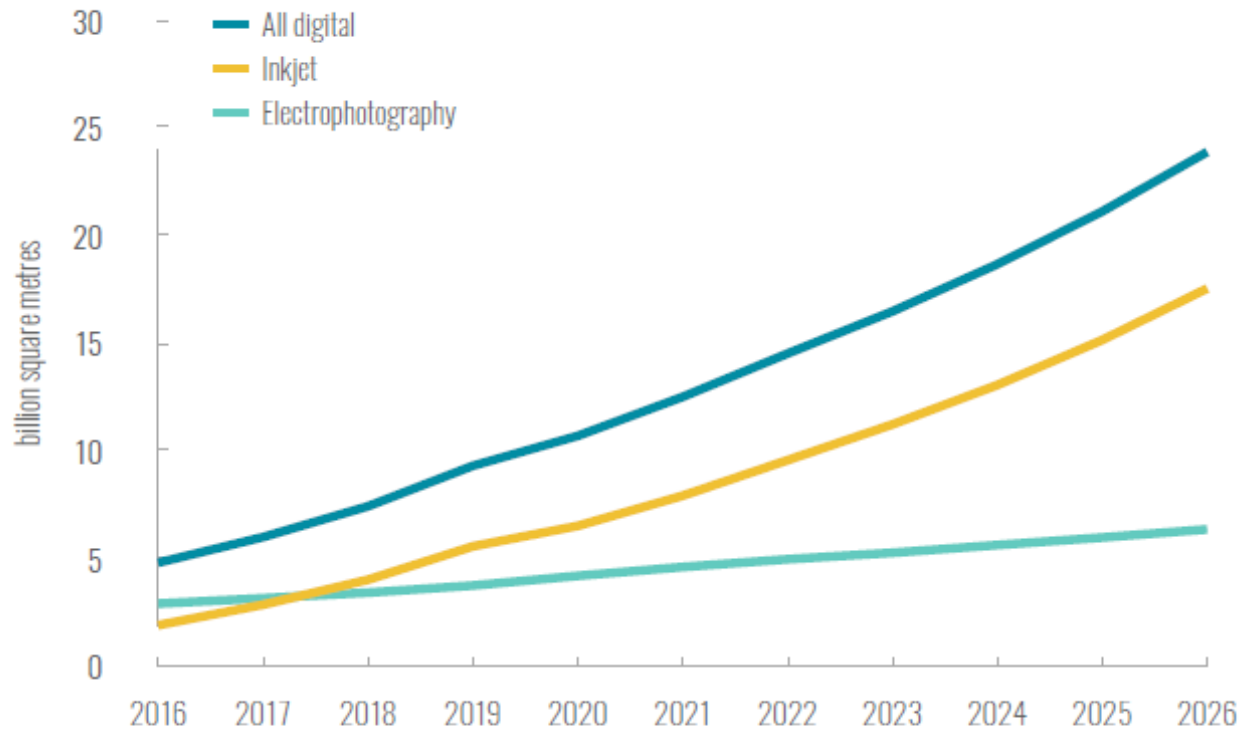
What is digital printing?

- What is in a name?
- Simple words with a big loading:
 - Digital printing is a method of printing from a digital-based image directly to a variety of media
 - In digital printing there is no need to replace printing plates / cylinders / screens, whereas in analogue printing this needs to be done for a different image
 - The transfer of ink is not always contactless!
 - This results in:
 - personalized printing; more print-on-demand
 - shorter runs
 - often faster turnarounds
 - Fast growing market

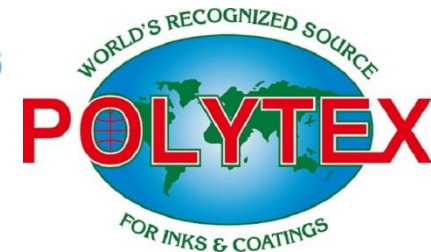


What is digital printing?

- Global Digital Printing towards 2026 in packaging based on print volume

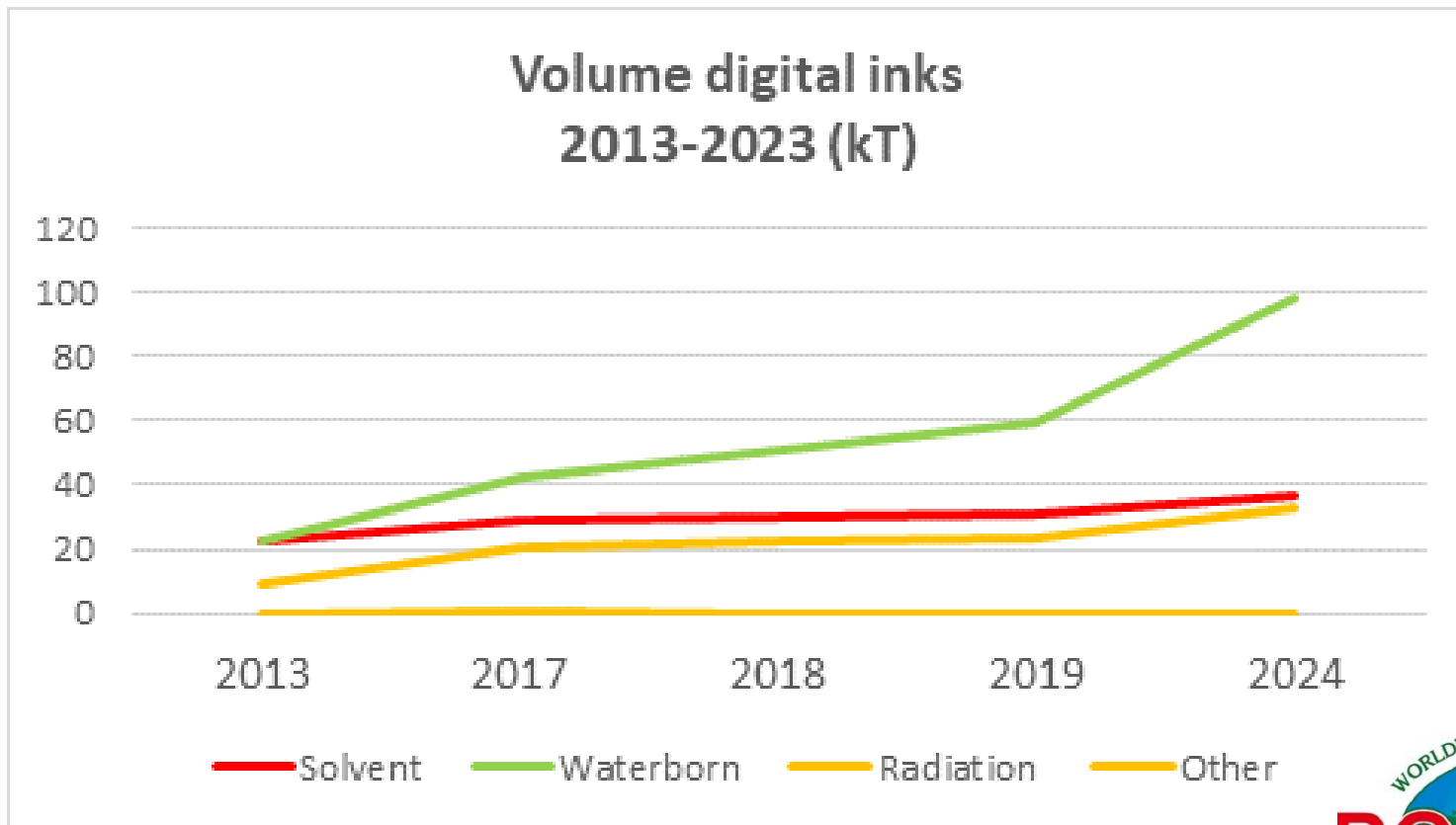


Source: Smithers



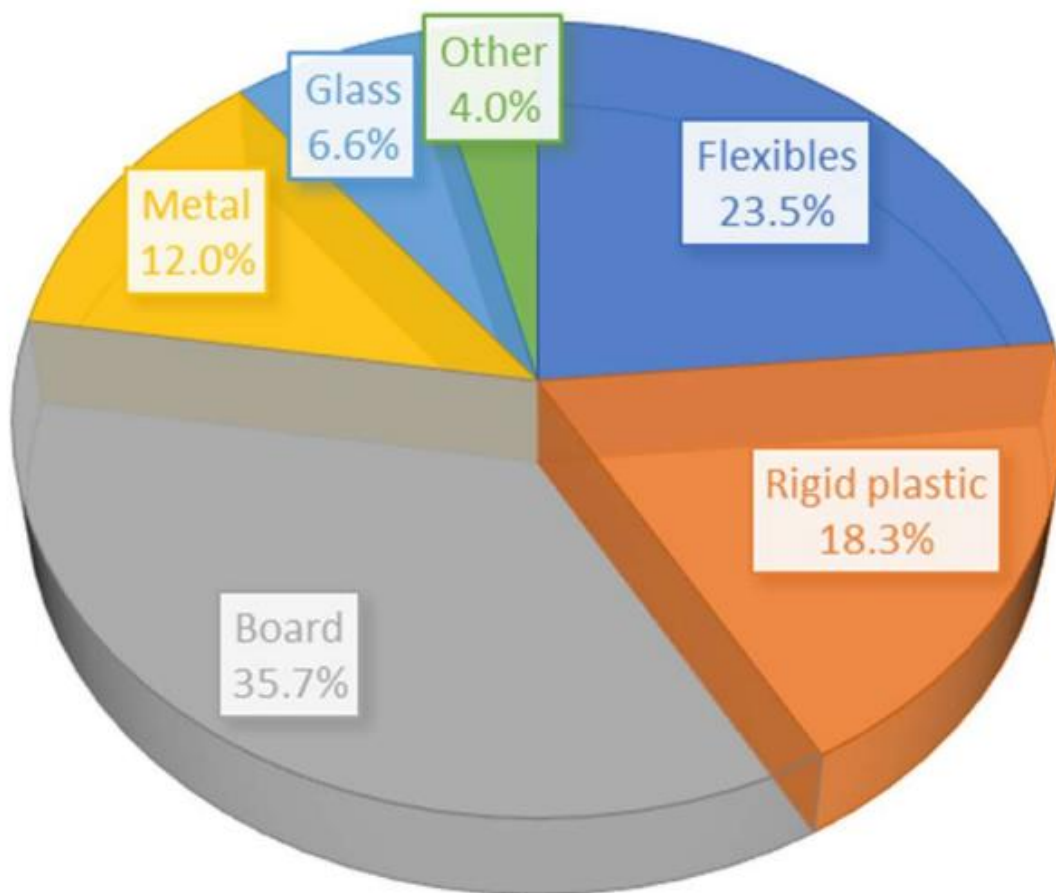
What is digital printing?

- Biggest growth is expected in waterbased systems.....



What is digital printing?

- How it is divided in the packaging industry.....



What is digital printing?

- From 13,5% total market output in 2014 towards >21,0% in 2024



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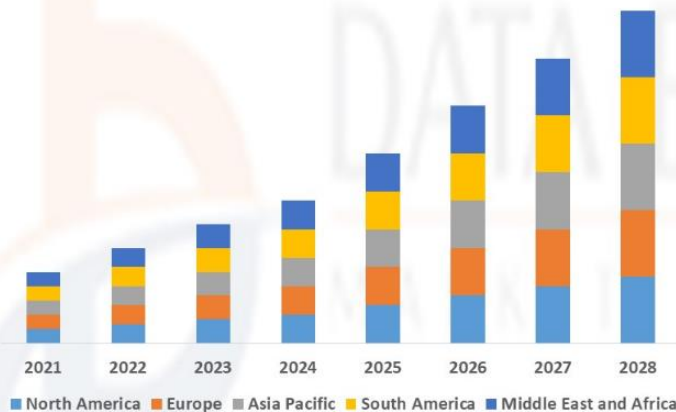
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MARKET II

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Global Digital Printing for Packaging Market is Expected to Account for USD XX Million by 2028



Global Digital Printing for Packaging Market, By Regions, 2021 to 2028



DATA BRIDGE MARKET RESEARCH



2026



other segments, the use of digital printing is expanding.

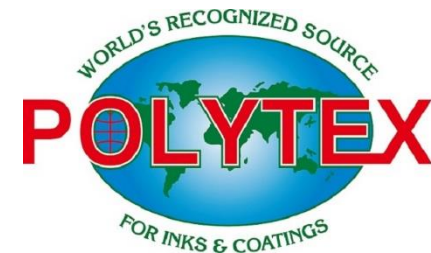
What is digital printing?

- Question raises:

Is everything possible?

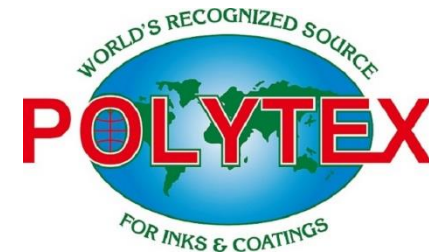
- The answer is obvious:

No, at least not yet.....



Different kind of 'digital applications'

- Digital is one big jumble of types, concepts and techniques for the inks and printing
 - For the “inks” several options like:
 - UV-based
 - Solvent based or Co-solvent
 - Latex
 - Toner systems (dry and wet)
 - Waterbased → Actega will tell you more
 - For the applications:
 - Off-set like such as HP Indigo with liquid electrostatic inks
 - Laser (with toner powder)
 - Inkjet Piezo d-o-d → Actega will tell you more



The use of a primer

- Often to prepare the substrate for digital printing, a primer is needed
- Better name for it:

Digital or Inkjet Receptive Coating

- What is the function?
 - It creates an “anchor” for the inkjet ink, improves the adhesion
 - Contributes, often enhances the printquality (dot gain)
 - Can positively influence the drying of inkjet inks
 - Mostly appearance is matt, use of nano-techniques makes more glossy versions possible
 - Can enhance physical properties of the total system



The use of a primer

- Many substrates require 'a special treatment'. There is a wide variety of substrates like:
 - Paper, (un)coated, matt, glossy different grades
 - Film (BOPP, PVC, PET, PE etc.)
 - Canvas, Tyvek/Banner materials
 - Non-woven, Fabric
 - Metal
- Application can be done in:
 - Flexo
 - Gravure
 - (Rotary) screen
 - Spray
- Volume is growing as well; ± 2.000 kT a few years back



The use of a primer



The base of a waterbased system

- Is there a real difference between
 - Primer
 - Ink
 - Coating

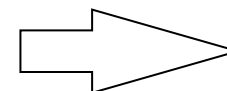
- Mainly the name



The base of a waterbased system

- Waterbased inkjet receptive coating
- Build up:

“Solvent” = Water	10 - 80 %
Special Fillers	0 - 40 %
Binders	10 - 40 %
Additives	0 - 10 %

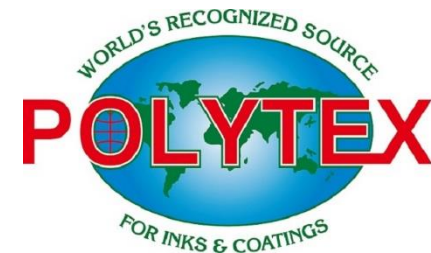


Coating



The (no) need for a topcoat

- After..... Digital printing
- A topcoat? Why?
 - For aesthetics
 - Functionality
- A lot depending on the total system
- All parties are more than willing to help you further



The next episode, Inkjet inks

Polytex Environmental Inks B.V.

**Thank you
for your attention**

