

Inkjet ...  
**'When'**  
are we?

**Erwin Busselot**  
Business Innovation & Solutions Director  
Ricoh Europe

Doxnet, Luzern 27<sup>th</sup> of February 2019

**RICOH**  
imagine. change.

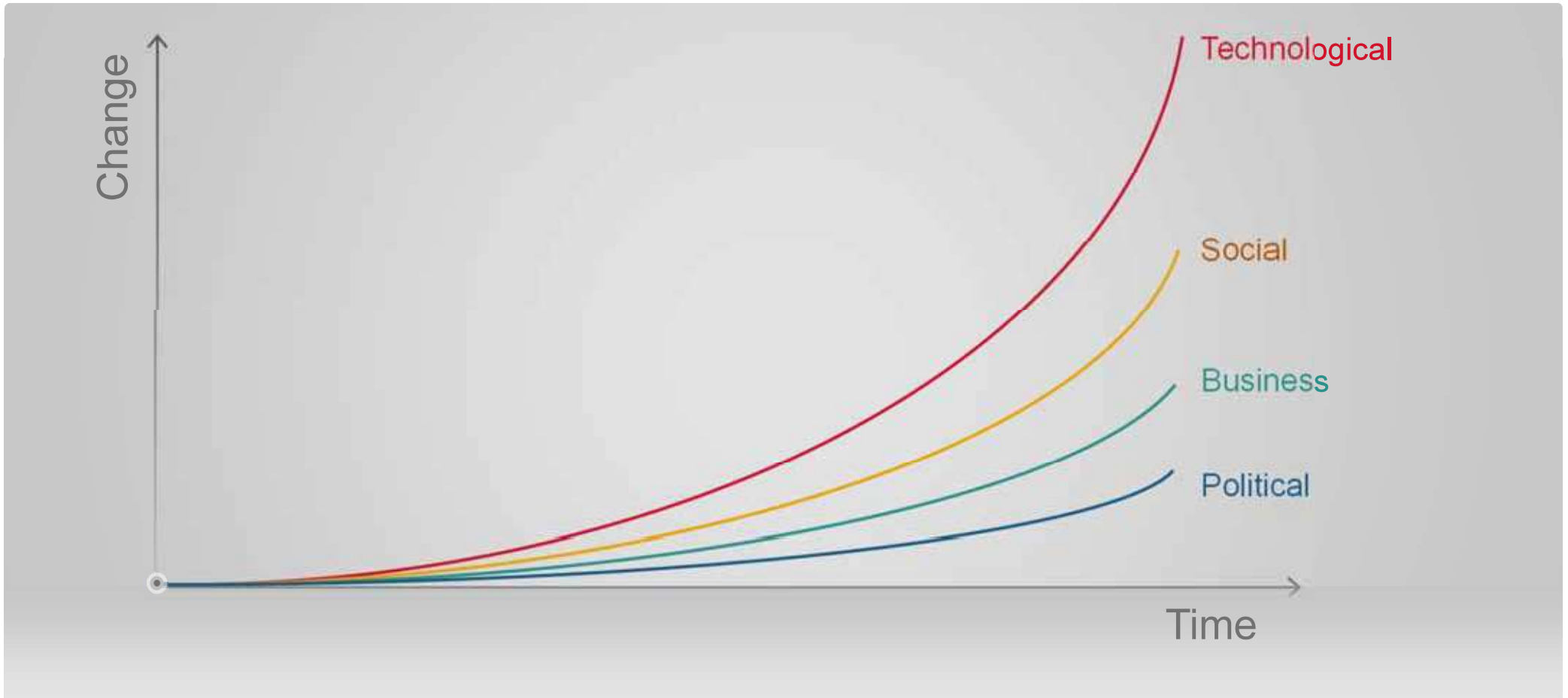




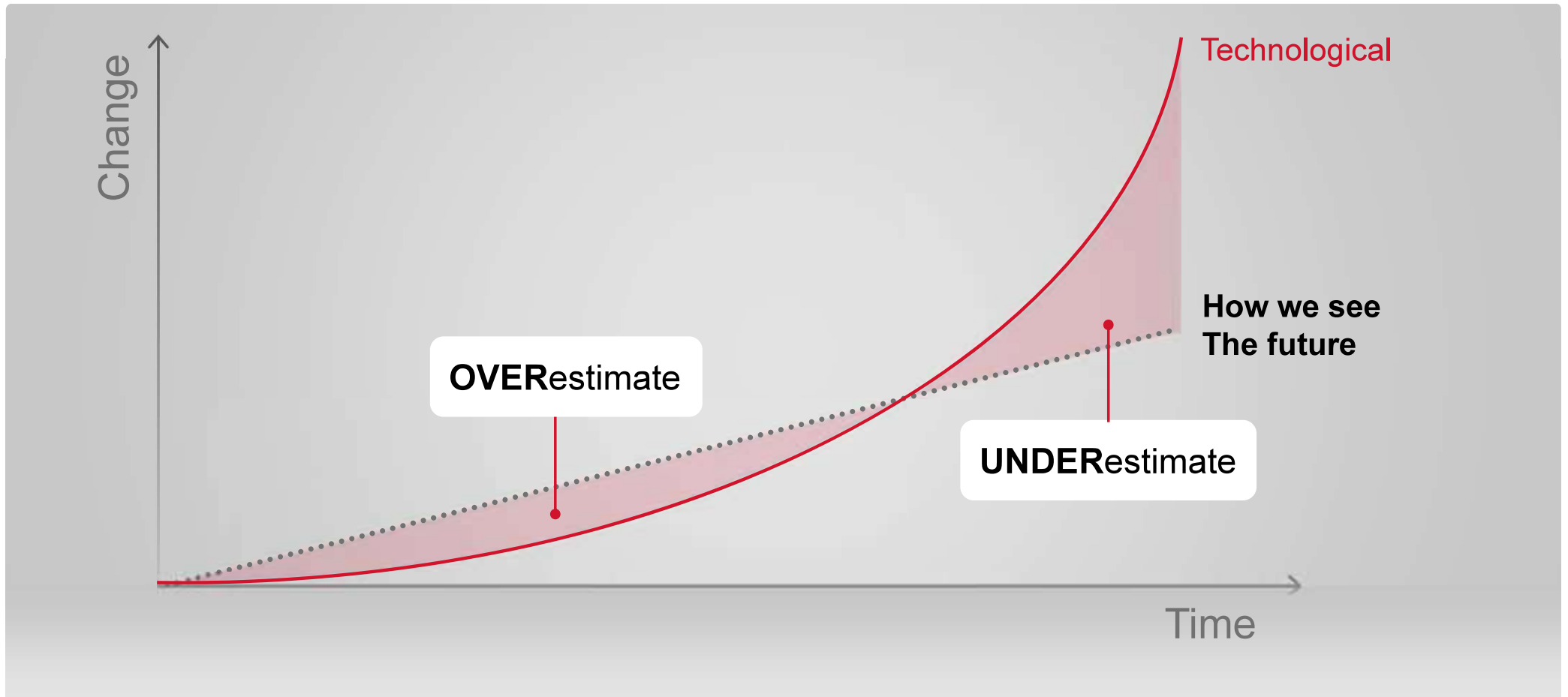
**Inkjet...**

**WHEN**  
are we?

# Change is...



# How we see the future...



# Amara's Law



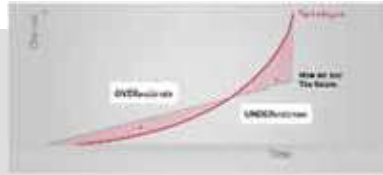
We tend to ***overestimate*** the effect of technology in the **short** run and ***underestimate*** the effect in the **long** run



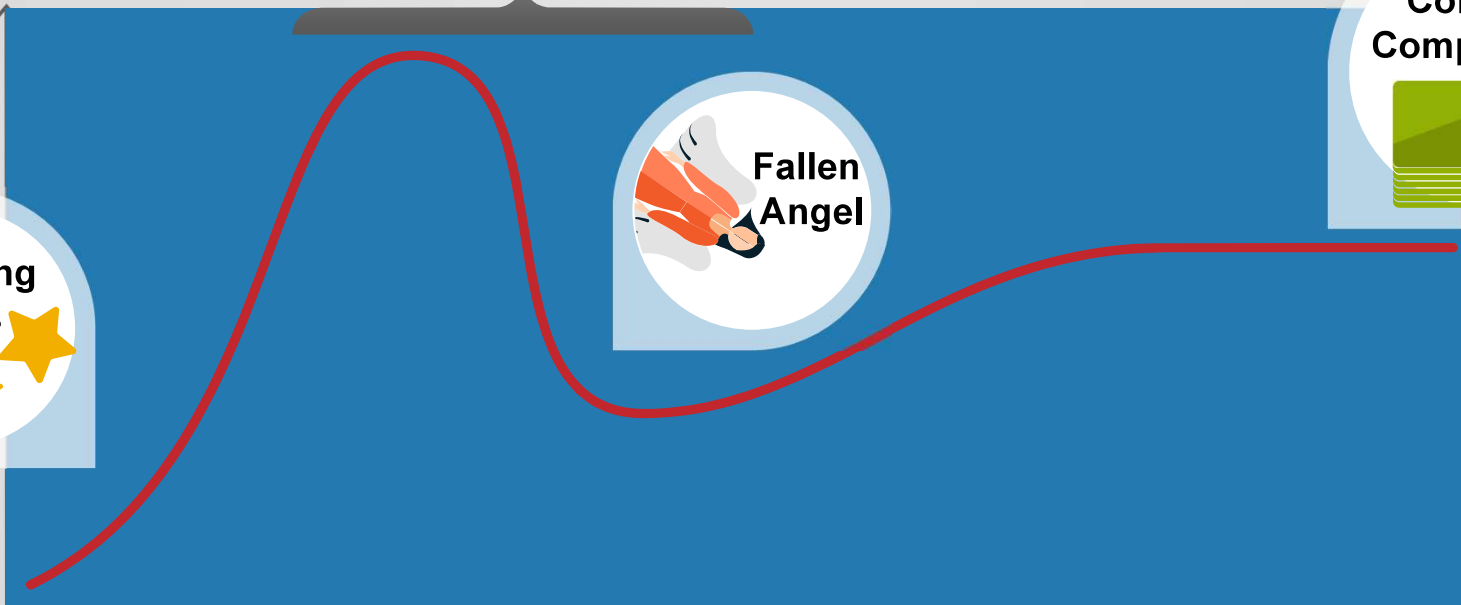
**Roy Charles Amara**

Researcher, scientist & past president  
of the Institute for the Future

# Amara's Law vs Gartner Hype cycle:



Interest in new technology ↑



Technology Trigger

Peak of Inflated Expectations

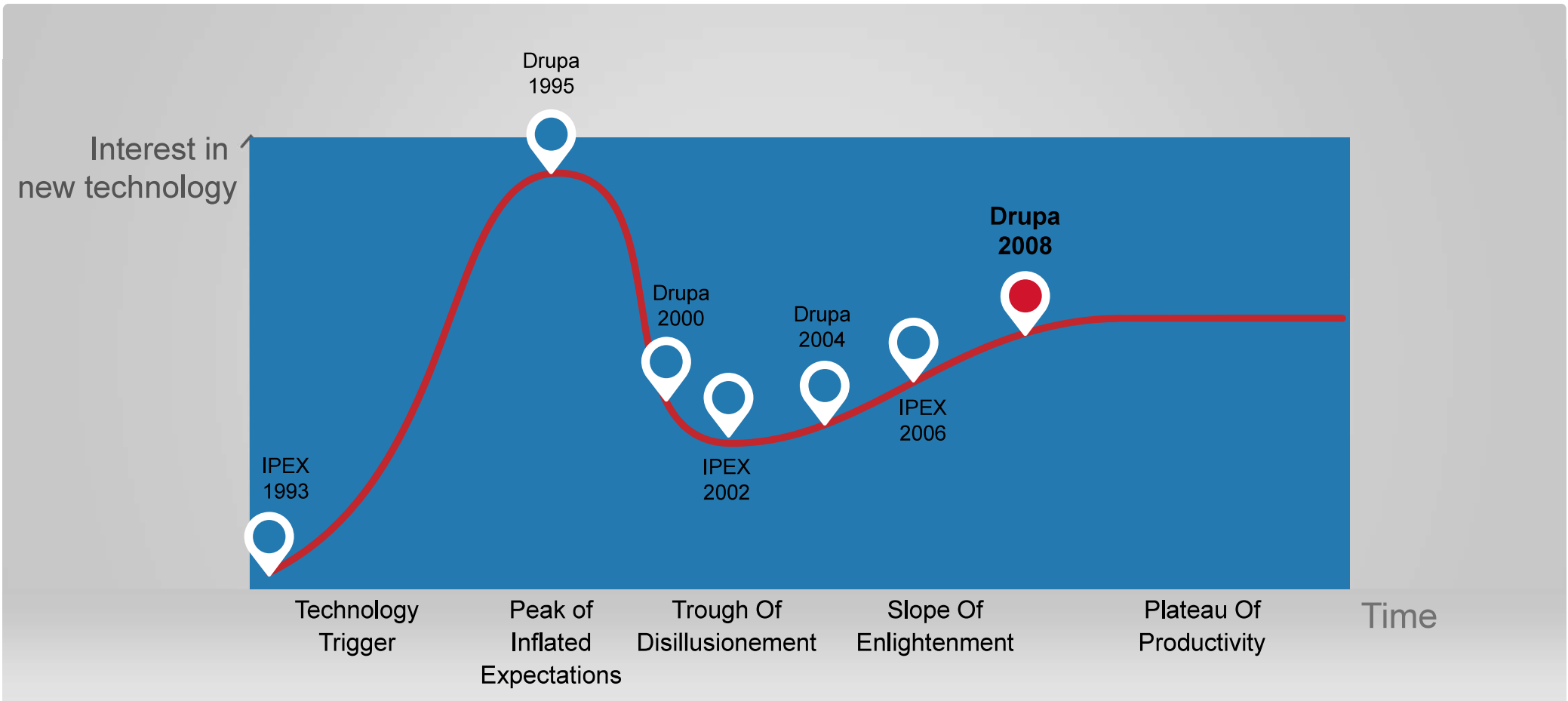
Trough of Disillusionment

Slope of Enlightenment

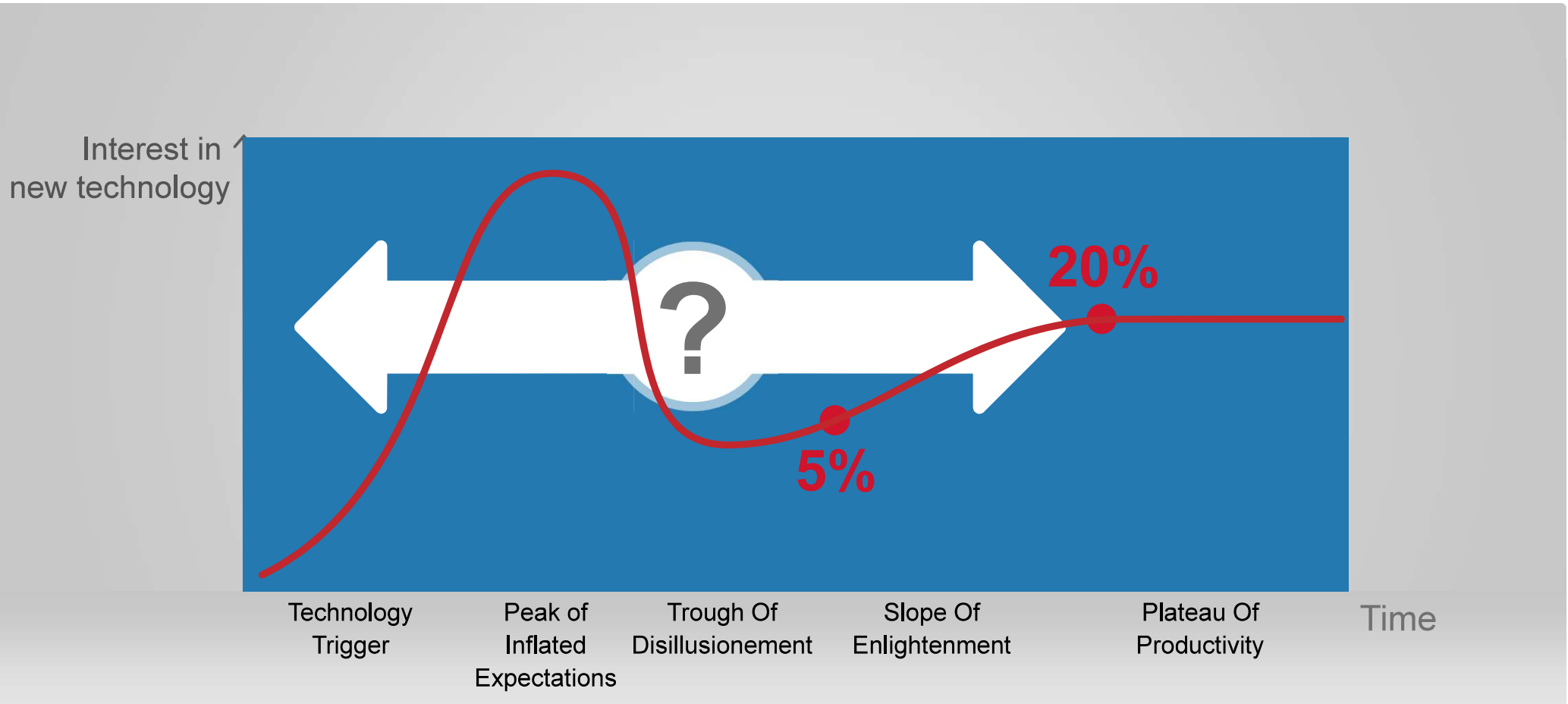
Plateau of Productivity

Time

# Gartner Hype Cycle: EP DP example

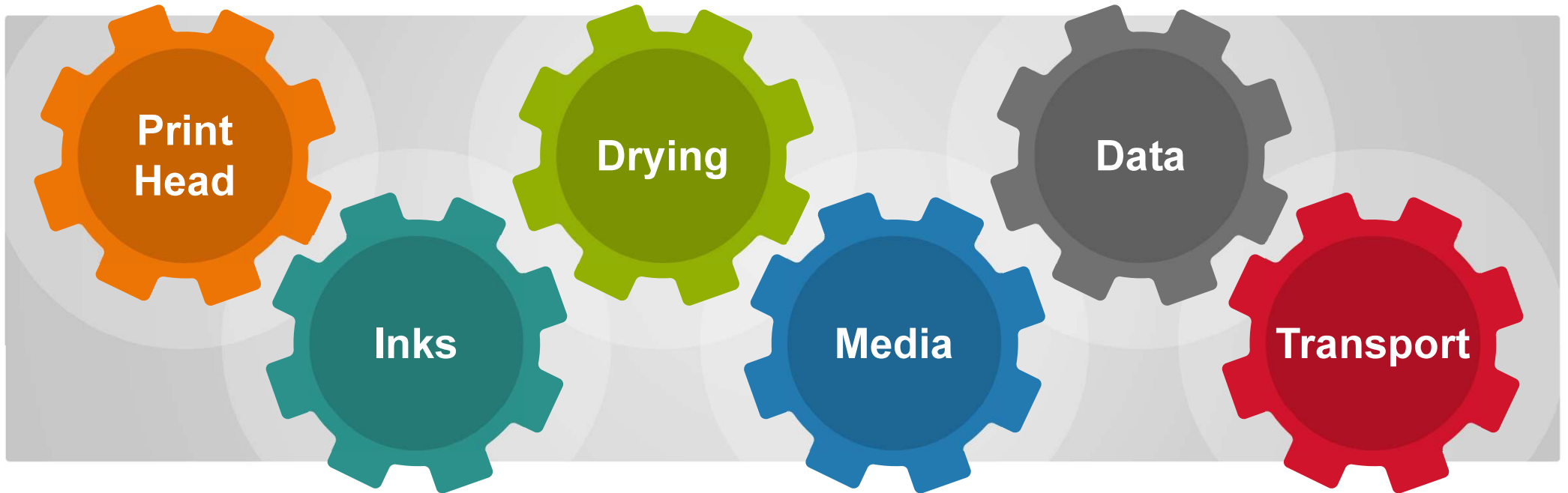


# Gartner Hype Cycle: Where is IJ DP now?



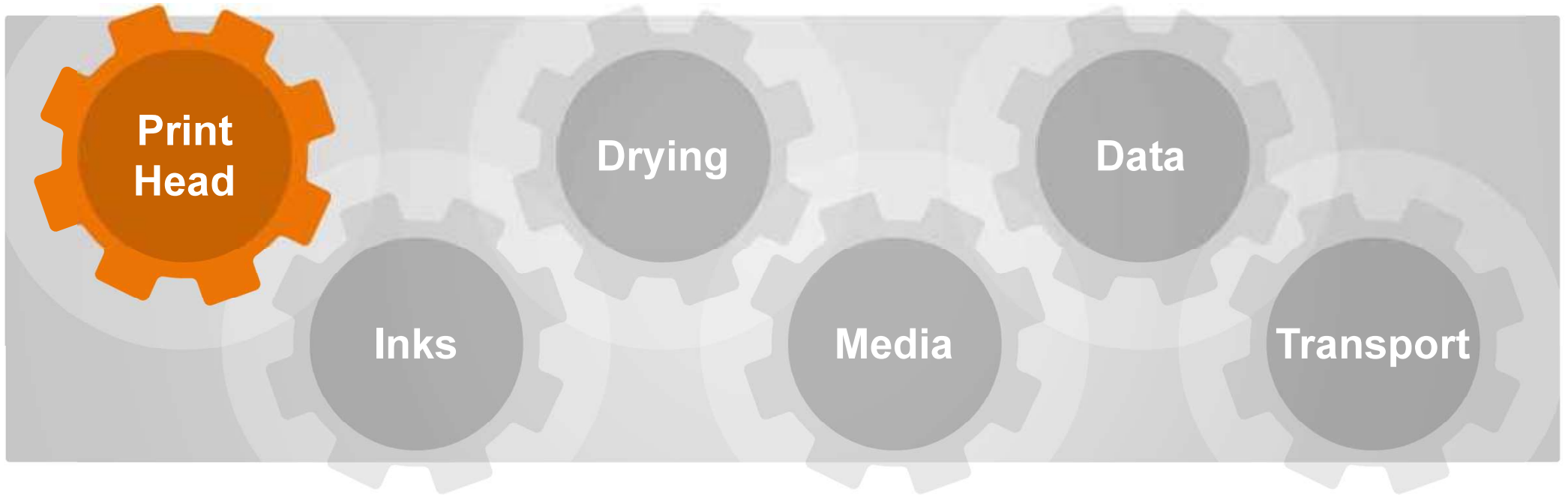


## Technology: Inkjet, a holistic approach



**‘Holistic’:** The idea that the whole is more than merely the sum of its parts

# Inkjet, a holistic approach



# Ricoh & Print Heads



## Over 34 years experience in inkjet printing

3D models, Flatbed, Textiles, Bill-boards, Documents



## Pro VC6/70000 print heads are made of stainless steel

Exceptional **durability & versatility** for use with a **variety of fluids**



## High resolution

**Native 1200 dpi print heads** placed in scanning direction, making print head adjustment easy.

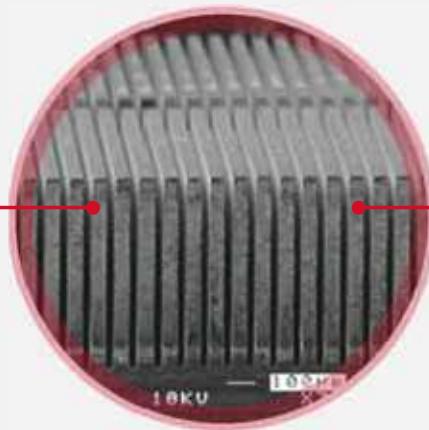


# Ricoh Print Heads: Piëzo Dicing

Ricoh has a very advanced technology for dicing piezo ceramic very minutely and achieved ultra fine cutting. There are 2 main advantages with Ricoh print heads:

✓ High aspect ratio of piëzo pole makes it possible to deform the ink chambers efficiently with **less power usage**.

✓ Piëzo poles are used in 2 ways: “active” and “inactive” piezo poles. Inactive piëzo works as support pillar and it will avoid unnecessary deformation of chambers when inks are jetted. (unnecessary deformation affects **ink jetting stability**)

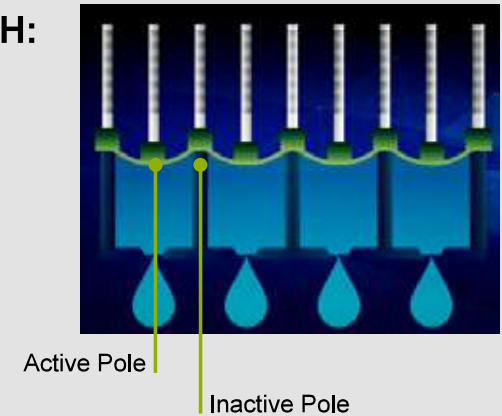


**Piëzo Pole for ink jetting**

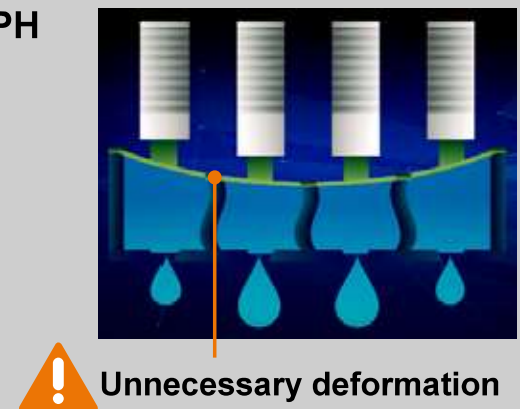
Width = 50  $\mu$ m  
Height = 640  $\mu$ m

**Ultra fine cutting**  
Trenched by Dicing technology

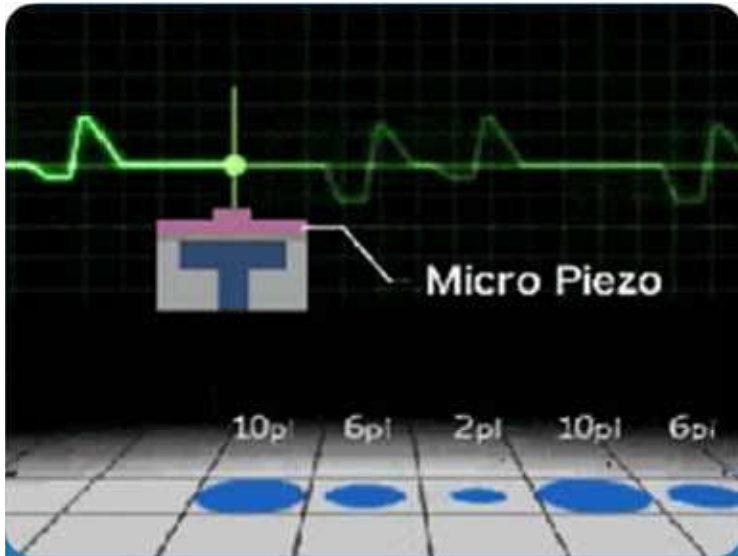
**Ricoh PH: bi-pitch**



**Other PH**



# Multi drop technology



## Variable Drop Size: 2 Bits / Spot

In addition to 1200 x 1200 dpi printing capability, VC70000 dynamically changes its droplet size and is able to make droplets as small as 2 pl. It applies multiple droplet sizes at each resolution.

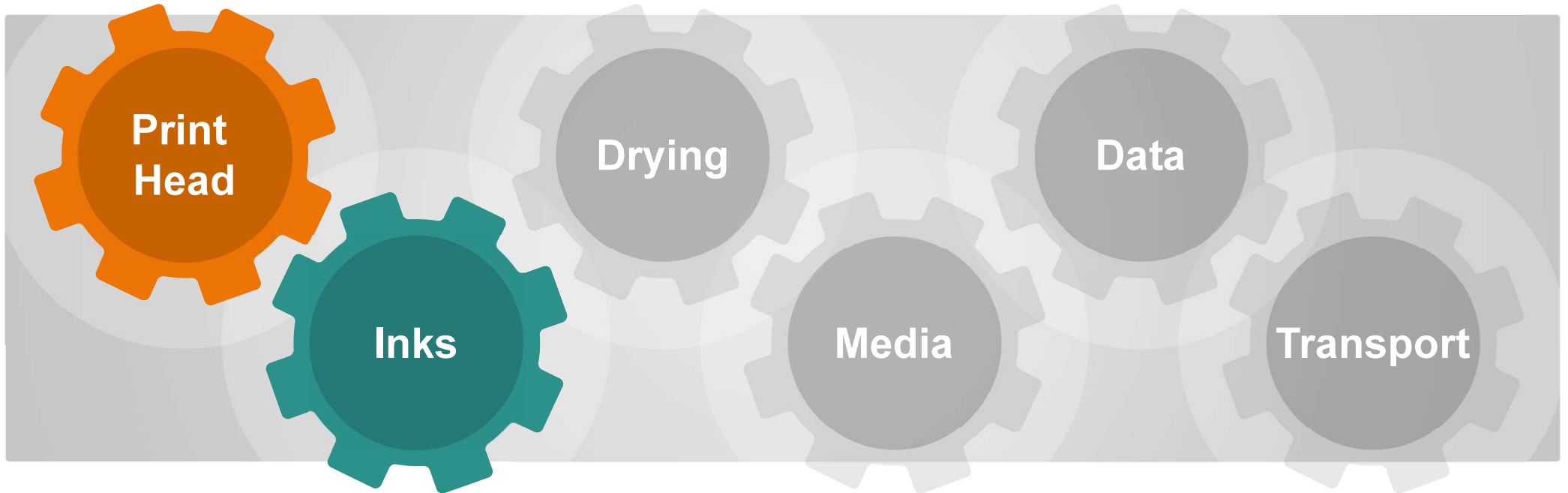


**Small droplets:**  
print areas with fine details

**Large droplets:**  
print areas with solid fills

**Medium droplets:**  
details in the mid tones

# Inkjet, a holistic approach



# Inkjet Ink Technology

## Less H<sub>2</sub>O

Higher Optical Density

Faster Drying

Less curling & cockling of the paper

Less problems with intercolor bleeding

More compatible with Offset coated media

50%  
H<sub>2</sub>O



50%

**Hybrid Solvent-  
Water based ink**

**+ PH designed  
to be compatible with  
various viscosities**



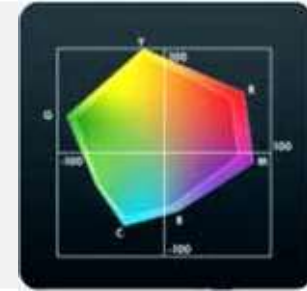
**Light &  
water fastness  
similar to offset  
printing process (for  
in doors applications)**

# New RICOH Pro VC70000 inks

New Inks produce great color and no need for priming

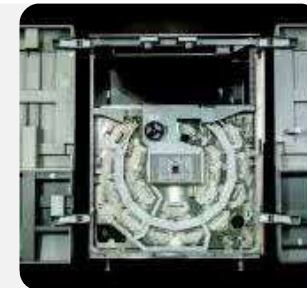
**Large color gamut**

**Higher density**  
(Target 95% of ISO Gamut)



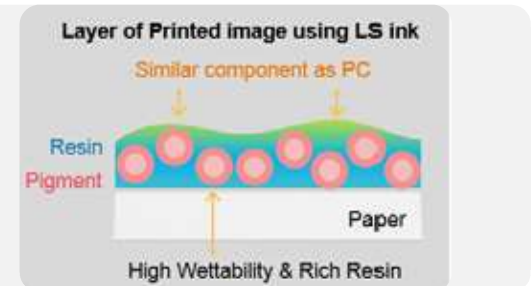
**High print speed**

**Quick drying** while maintaining jetting reliability



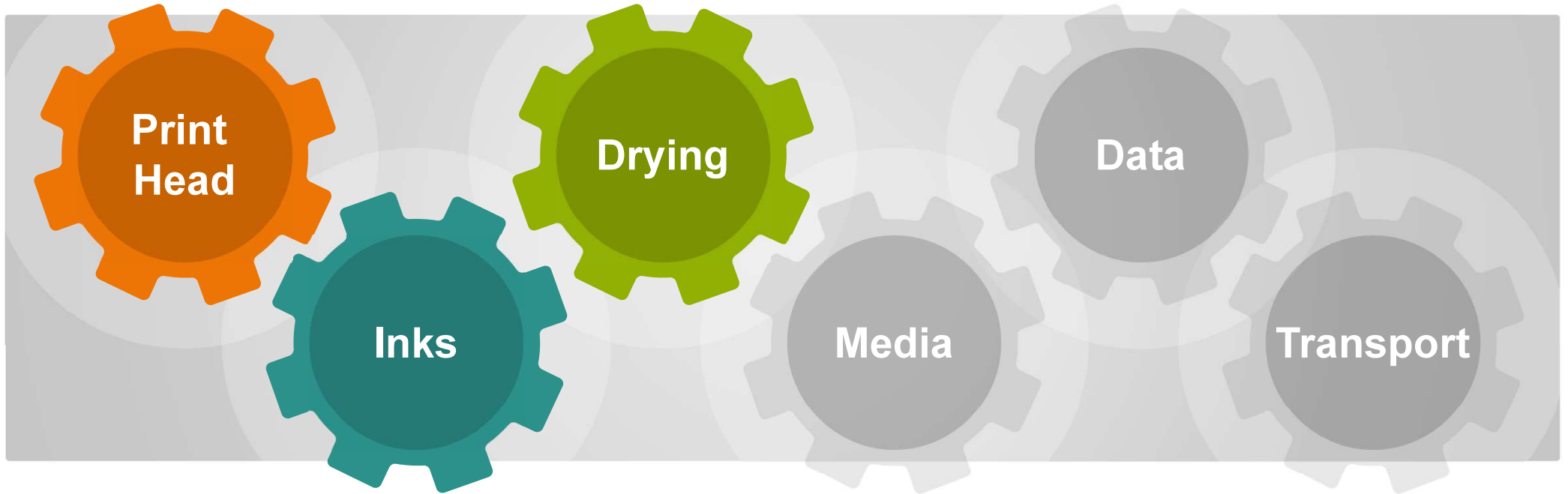
**UC & PC less ink**

**Similar protective characteristics** as current PC while compensating current pre-treatment of coated paper





# Inkjet, a holistic approach



# NEW RICOH Proprietary Drying System

**RICOH**  
imagine. change.

**NEW!**

More efficient  
air knives

**NEW!**

Exit unit with internal  
chiller rollers

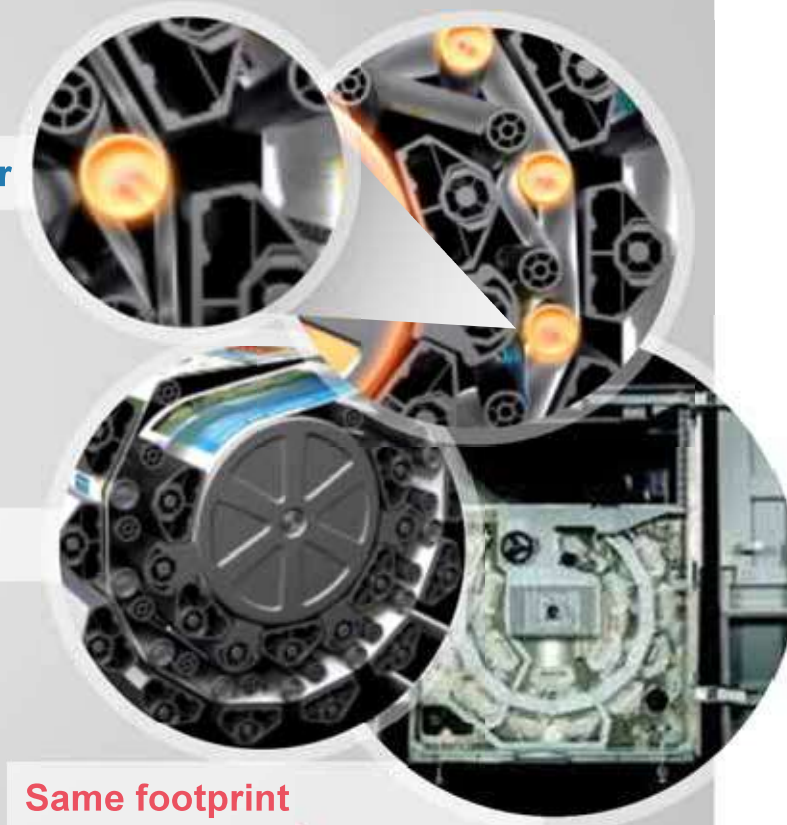
**NEW!**

Cockling correction  
technology

Small Heat Roller

Heat Drum

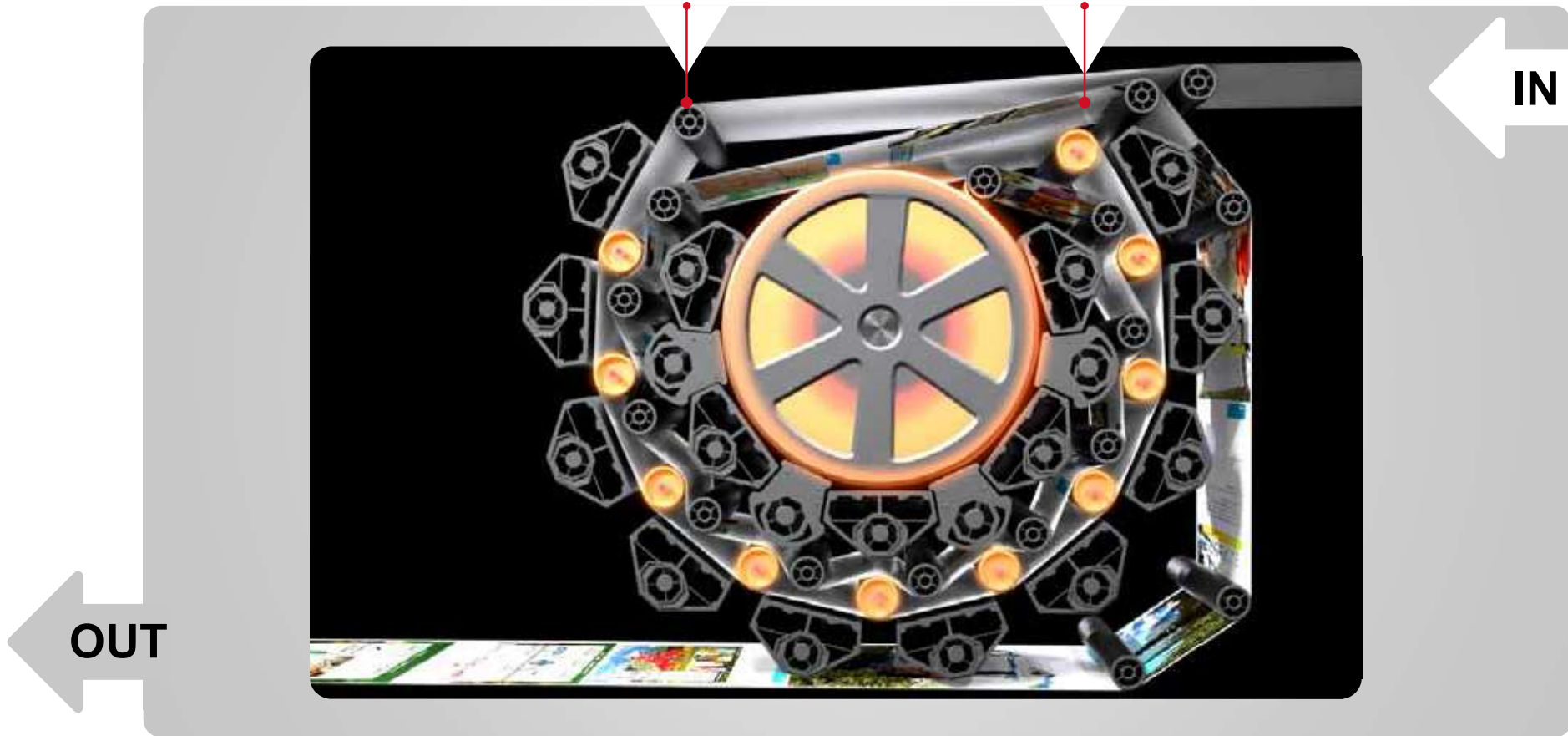
Same footprint  
as Pro VC60000



# RICOH Proprietary Drying System

Drying start

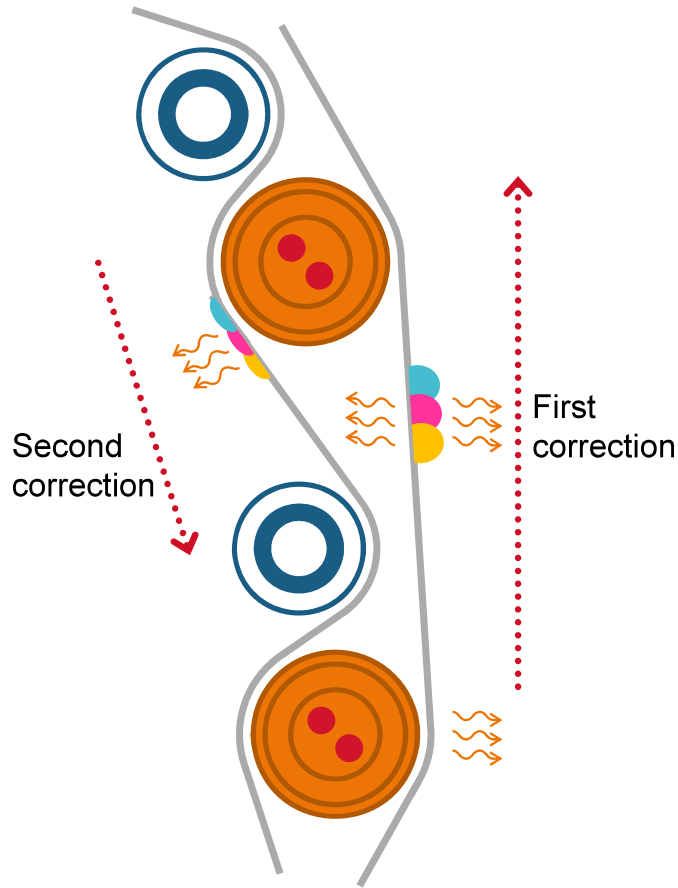
Drying stop



# Cockling Correction Technology

As paper is wrapped around small diameter heat rollers, tension and heat combine to **effectively “iron” the paper.**

## Cockling Correction

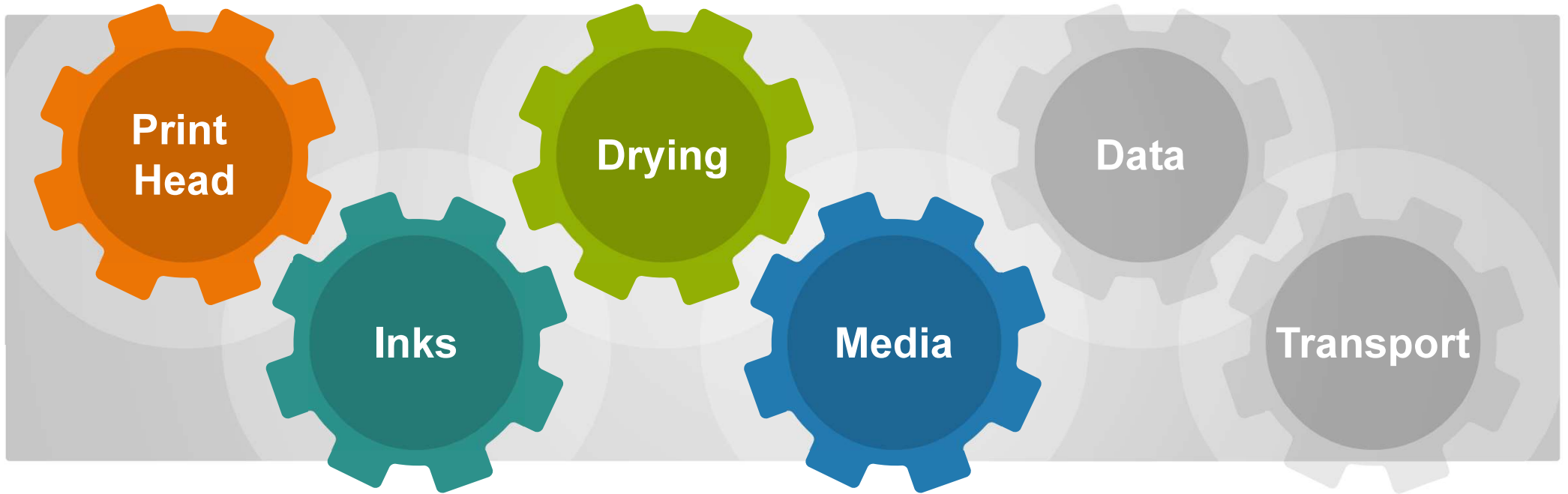


**Heat Rollers**

This “ironing” process is repeated **10 times in each engine**, which prevents re-cockling as the drying process completes.


# Inkjet, a holistic approach

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# Media flexibility

**With Undercoat**



**Without Undercoat (VC70000)**



**120 – 150 m**  
on offset coated

**150 m**  
on uncoated, inkjet treated,  
inkjet coated papers



No need for Undercoat, Protector Coat when printing on offset coated papers



Larger color gamut



Faster speeds on coated stocks (IJ and Offset)



Wider variety of coated media support



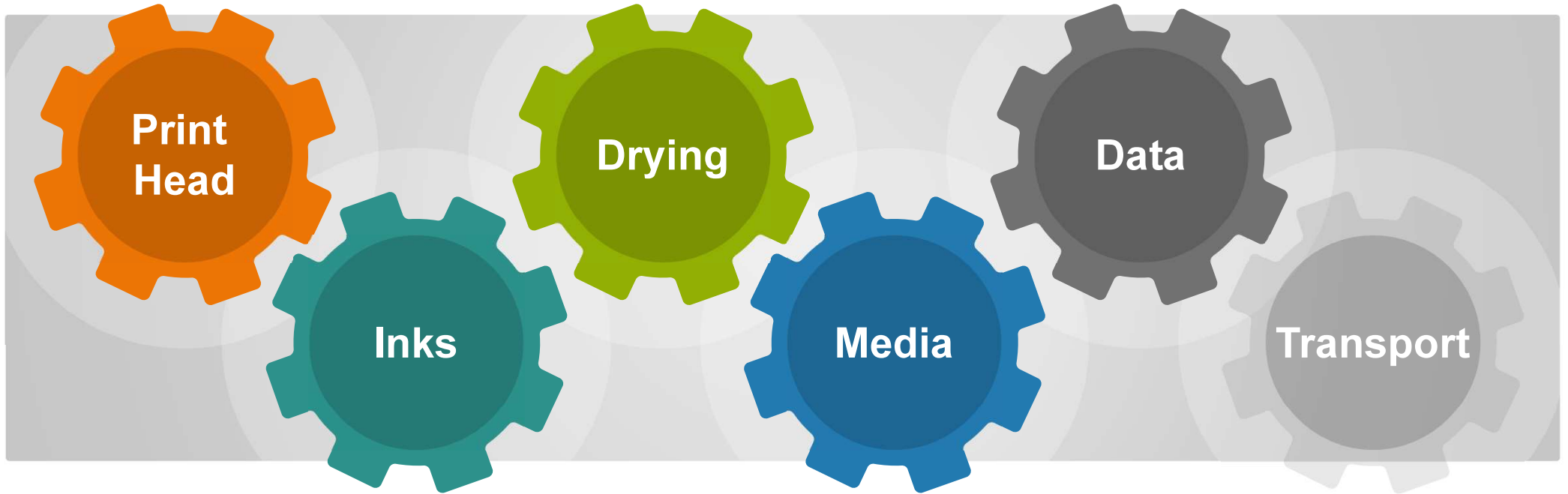
Faster uniformity



Similar or less maintenance

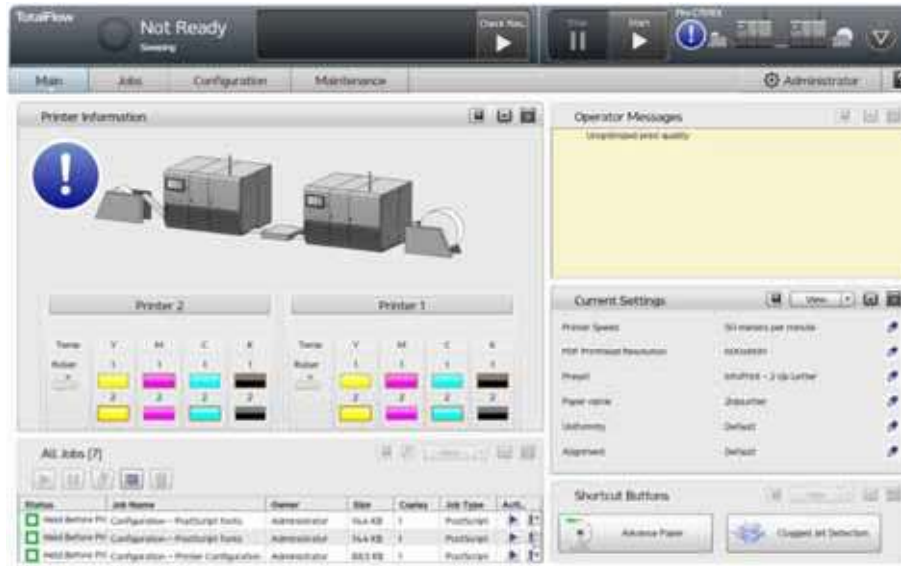
# Inkjet, a holistic approach

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# User friendly UI + Scalable DFE + different datastreams



AFP/IP  
DS

+

PDF

Jobs Hub 

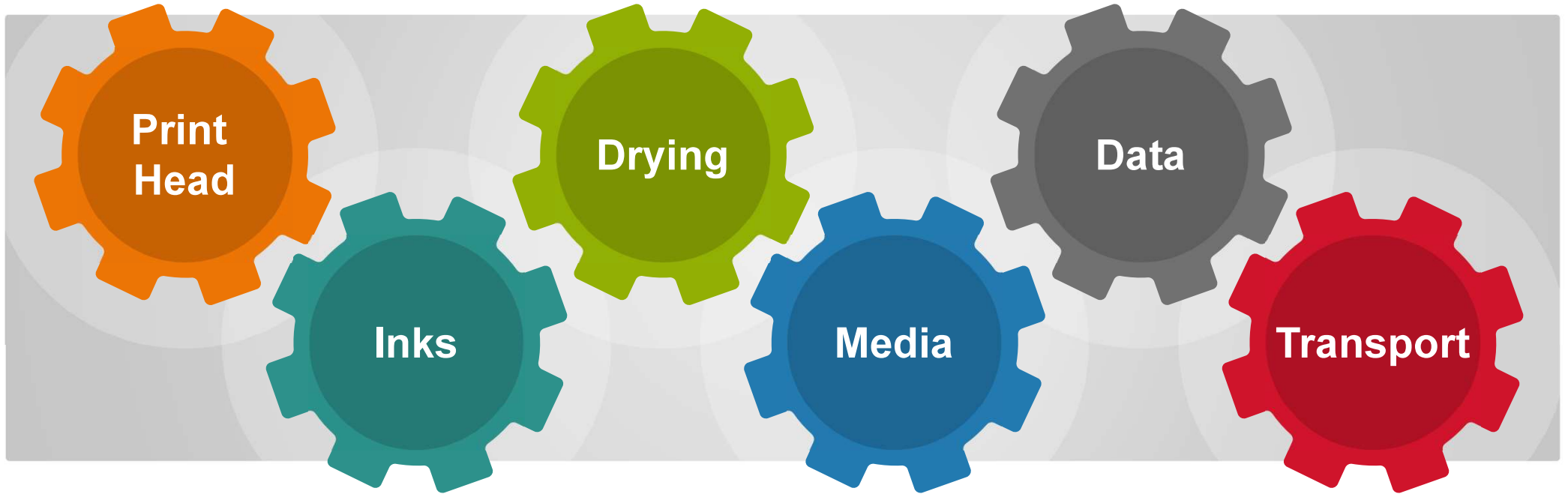
Configuration Hub 

Maintenance Hub 



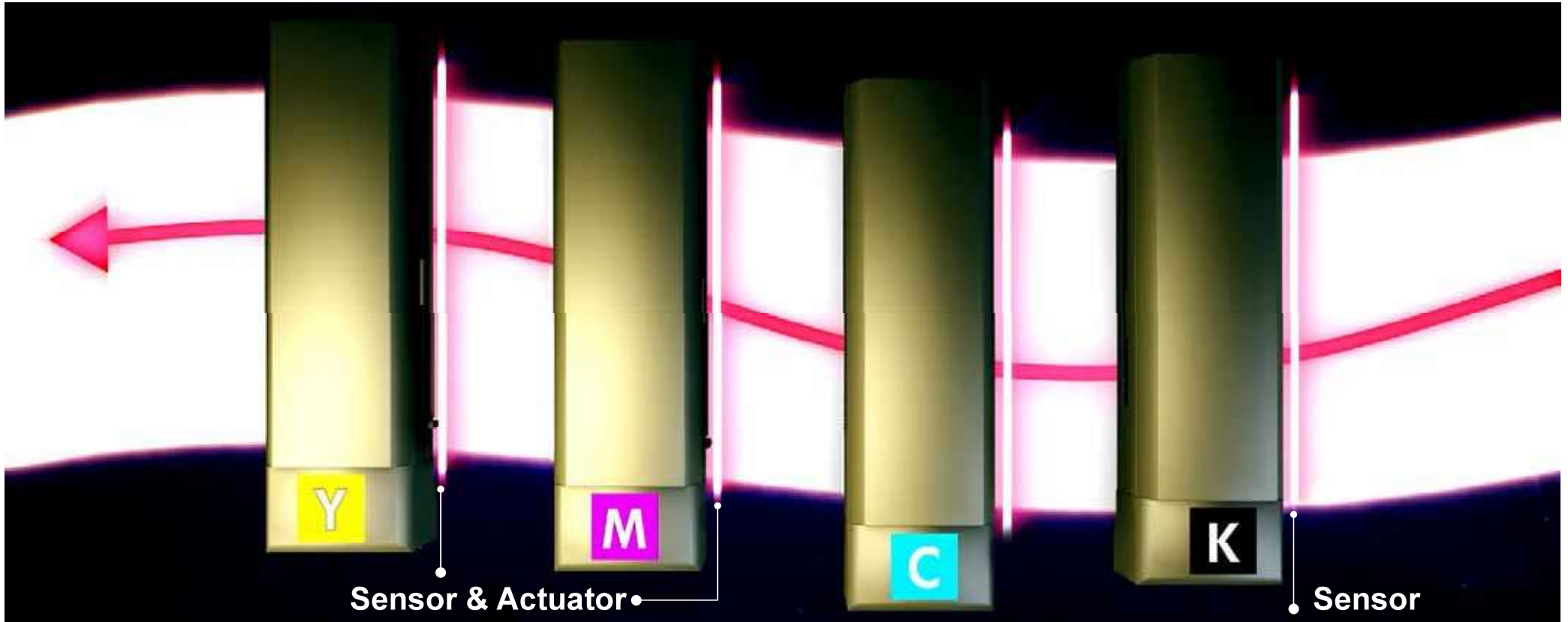


# Inkjet, a holistic approach



# Advanced paper transport with Dynamic PH Positioning

## Paper Wander



For better color to color registration

# High resolution scanner

**RICOH**  
imagine. change.



## Checking

✓ Nozzles



## Adjusting

✓ Inkjetting positions

✓ Uniformity

For better **productivity**

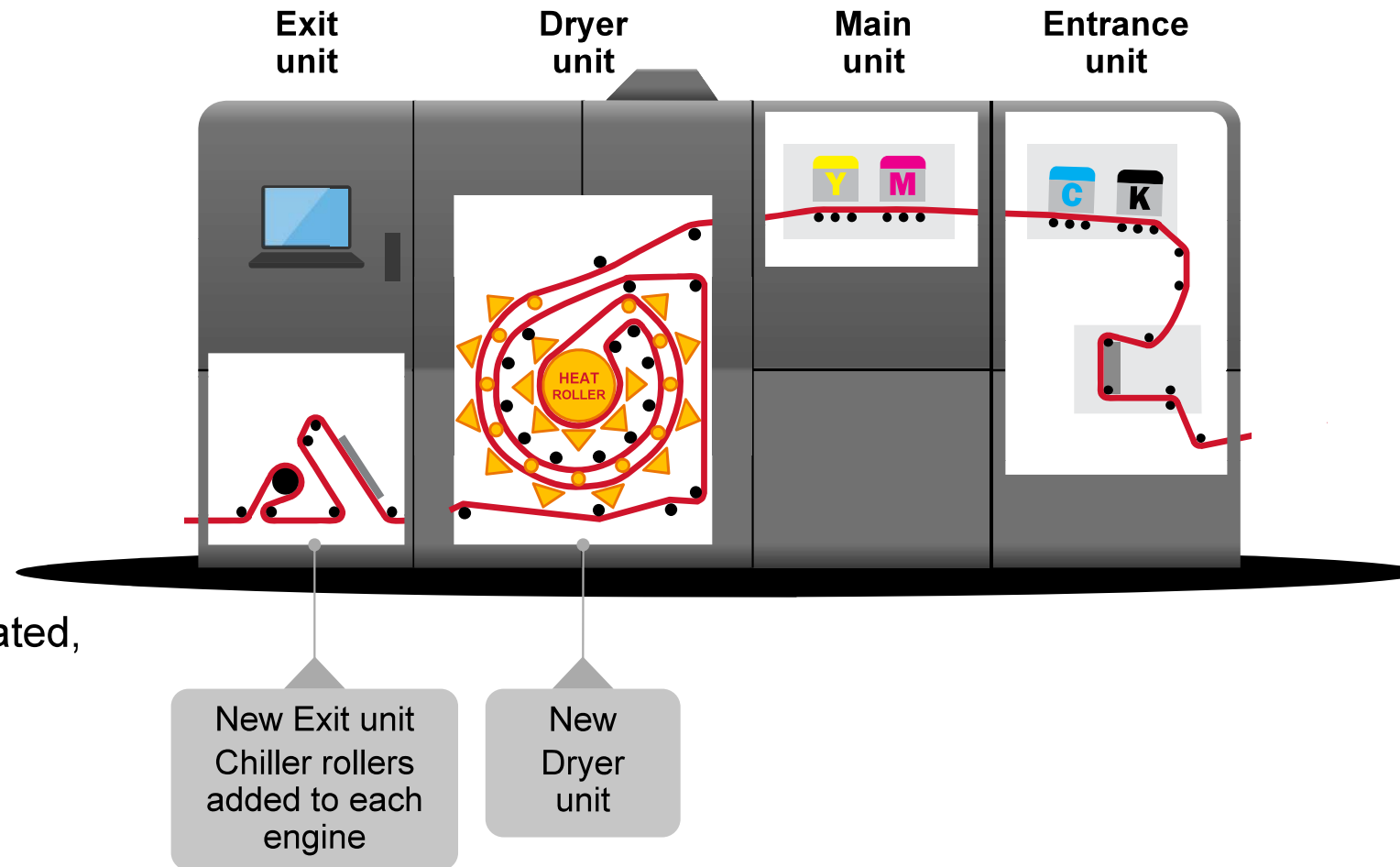
# Ricoh Pro VC70000 Press

**RICOH**  
imagine. change.

**Offset replacement**  
full speed printing on  
wide range of offset  
papers

✓ **120-150m** offset coated

✓ **150m** uncoated, inkjet treated,  
inkjet coated papers



# Ricoh's new Pro VC70000

Builds on the success of the Ricoh Pro VC60000

Targets the migration of high volume offset to digital print

New CF Inkjet flagship product

State of the art Ricoh extended gamut ink and drying technologies

Delivers the best balance of speed, print quality, reliability, cost, and media options





# Case study: Zalsman



## Why Ricoh?

- Trust in organisation, technologies, employees and Ricoh culture
- Collaboration with Ricoh Business Process Outsourcing

## Why Digital?



Offset declining, lower added value, price erosion, no USP any more besides pricing



Demand for digital printing applications is growing, need for more capacity in offset-like quality and productivity

## Why the Pro VC70000?

- High productivity at offset like quality with variable data
- Competitive running costs
- Capability to print on low cost offset coated papers

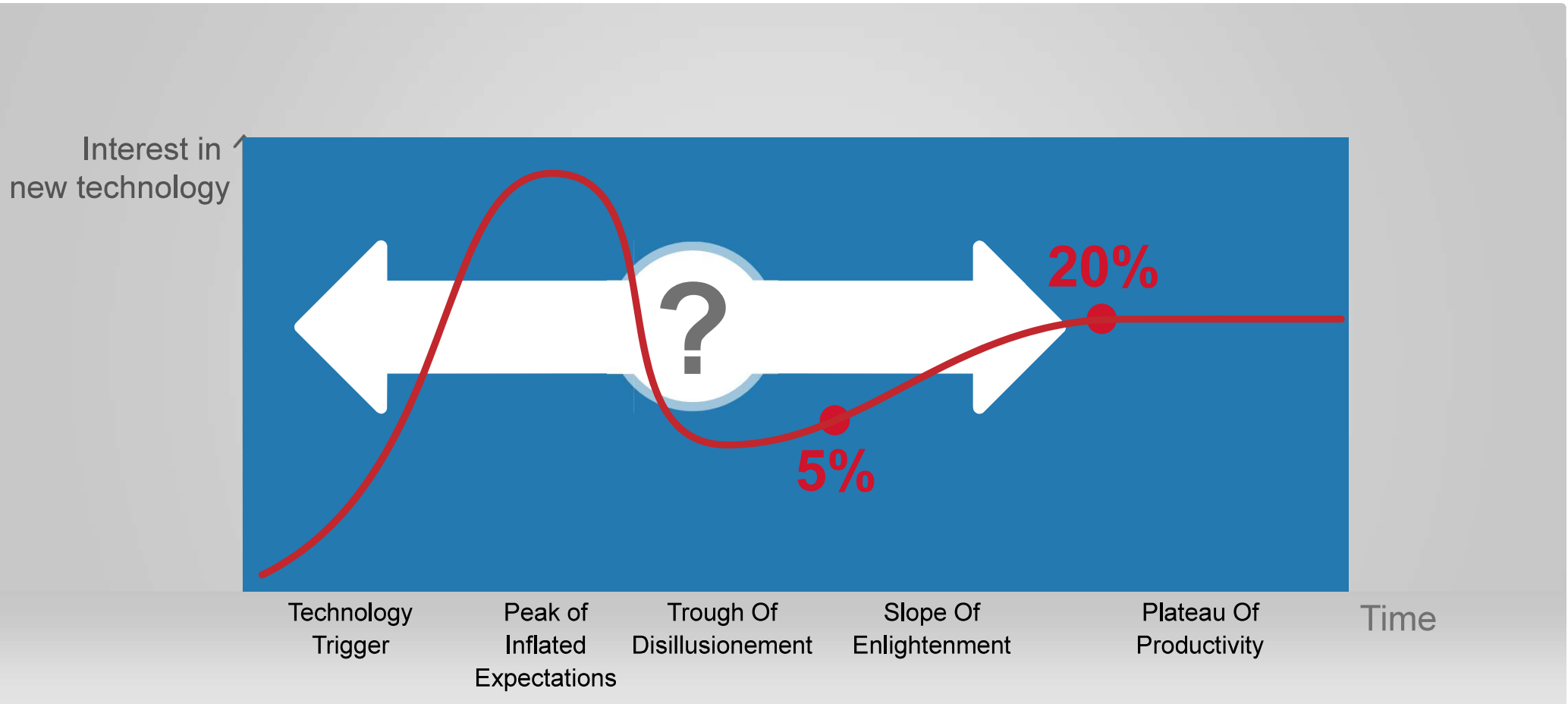
“

**The high quality and efficiency of inkjet is causing print jobs to shift from our offset presses and toner based systems to inkjet. This enables us to always choose the most efficient way to produce any individual order.**

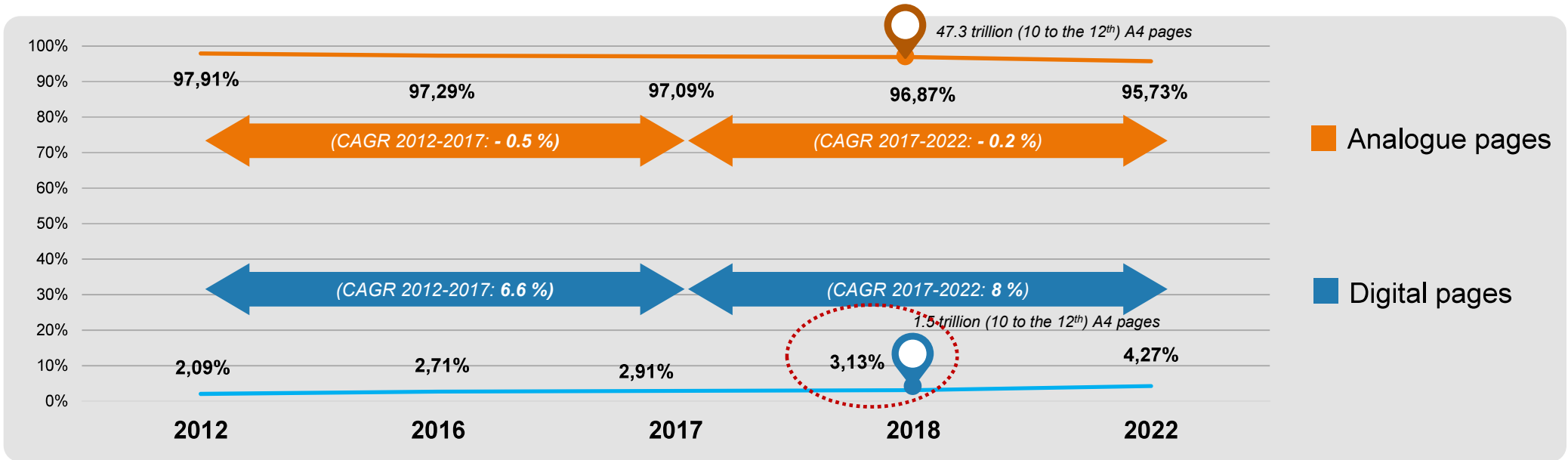
Herman Verlind, Director and Co-Owner  
Zalsman

”

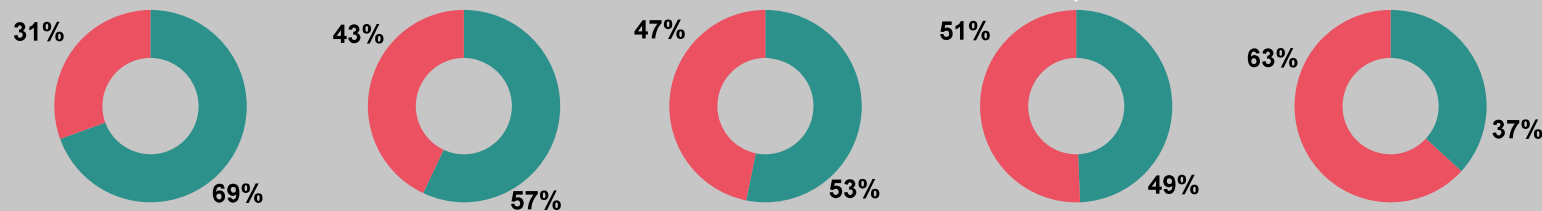
# Gartner Hype Cycle: Where is IJ DP now?



# The numbers: digital print by volume



## Digital, inkjet



■ EP pages  
■ IJ pages

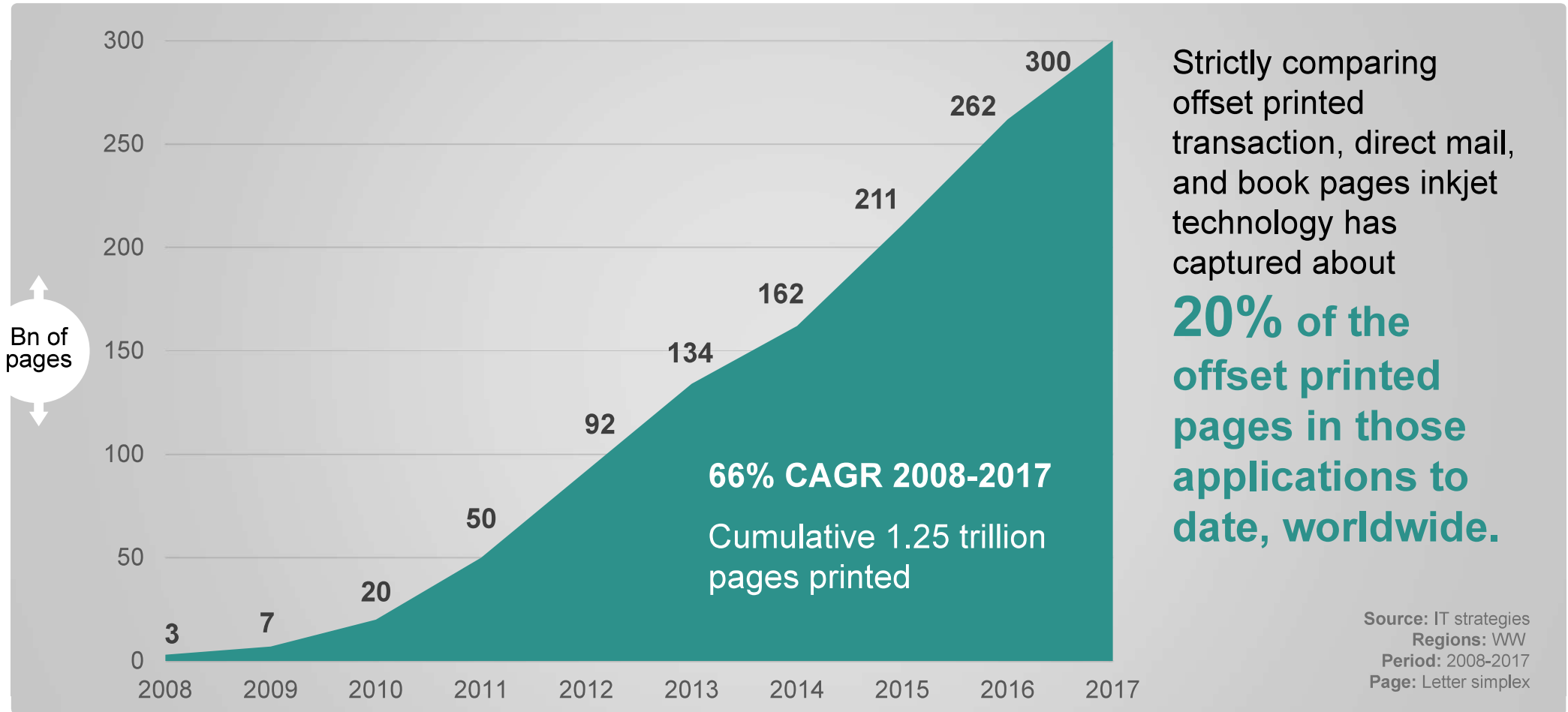
### Remarks

- Source: Smithers Pira July 2017
- Regions=WW (NA-EU-EE-ROW)
- Pages= A4 equivalent
- Process: CS litho, heatset web, coldset web, gravure, flexography, other analogue, electrophoto, inkjet





# CF IJ Page Volume growth





**Inkjet...**

**WHEN**  
are we?

Inkjet...



...the time is  
**now**



**Thank you**

FOR YOUR ATTENTION