AI & Automation
in Flexographic Printing

History of Industry Revolution
Exploring AI in Automation
AI fields of application
Personal
Enterprise

Challenges in Flexography
And what about AI?

AI...
AI in Flexo Printing
What is next?
Will your company be ahead in AI?

AI & Automation in Flexographic Printing

Explore the synergy between automation and AI in flexographic printing

SOMA | DNAi

SOMA Introduction

300+
employees

100%
Czech company

1000+
installations

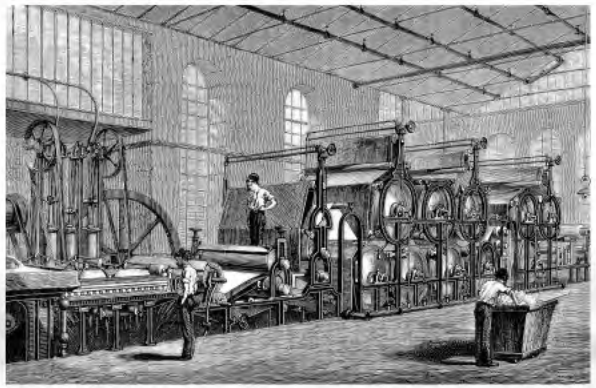
30+
years

SOMA

SOMA
Lanškroun,
Czechia

History of Industry Revolution

1st Industry Revolution



2nd Industry Revolution

3rd Industry Revolution

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The 4th Industry Revolution

1950's

1997

AI with no data - but powerful enough to beat human in Chess

2012

It marked the advent of deep learning and **AI**'s ability to process unstructured data.

2024

GenAI - Generative Artificial Intelligence - creative - e.g. texts, pictures, videos

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The 4th Industry Revolution

- robotics, automation, the Internet of Things (IoT), and big data

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2025-2030

AGI - Artificial General Intelligence - intelligence with the same cognitive functions as a human

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Explaining AI in Automation

Software
(programming)

VS

AI
(machine learning)

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Explaining AI in Automation

Software
(programming)

- step by step programming of CODE

VS

AI
(machine learning)

- data is used to generate a model (like code) that enables machines to perform tasks or make decisions (e.g., automation)

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Explaining AI in Automation

Software
(programming)

- step by step programming of CODE
- time demanding

VS

AI
(machine learning)

- data is used to generate a model (like code) that enables machines to perform tasks or make decisions (e.g., automation)
- is fast and robust

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Explaining AI in Automation

Software
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- step by step programming of CODE
- time demanding
- precise

VS

AI
(machine learning)

- data is used to generate a model (like code) that enables machines to perform tasks or make decisions (e.g., automation)
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- may be inaccurate

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Explaining AI in Automation

Software
(programming)

- step by step programming of CODE

- time demanding
- precise
- predictable, understandable, we know all criteria

VS

AI
(machine learning)

- data is used to generate a model (like code) that enables machines to perform tasks or make decisions (e.g., automation)

- is fast and robust
- may be inaccurate
- not understandable, we know INTENT but not CRITERIA

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Automation

AI
(machine learning)

- data is used to generate a model (like code) that enables machines to perform tasks or make decisions (e.g., automation)
  - is fast and robust
  - may be inaccurate
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AI
(LLM e.g. GPT or Gemini)

- A subset of machine learning that specializes in natural language processing (NLP). These are massive neural networks trained on billions of words and sentences.
- The model analyzes vast amounts of textual data.
- It uses transformers (e.g., the GPT architecture), which enable contextual understanding of text.
- It generates text based on the probability of the next word.

AI fields of application

Personal

productivity tools

Enterprise

process automation

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brand
owner idea

GALAXY
of Flexography

Journey from idea
all the way to
packaging produced

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GALAXY
of Flexography

Journey from idea
all the way to
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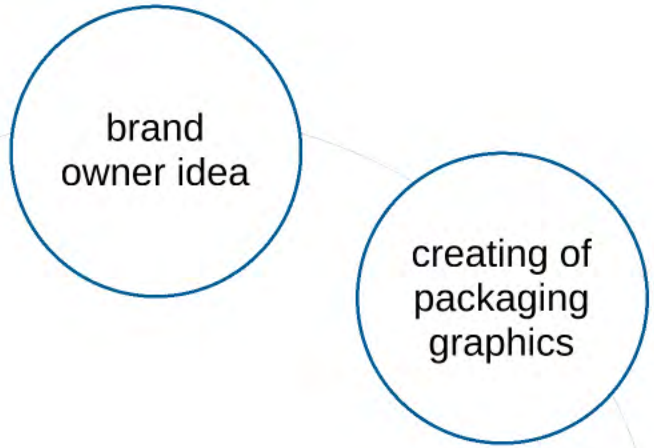

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GALAXY of Flexography

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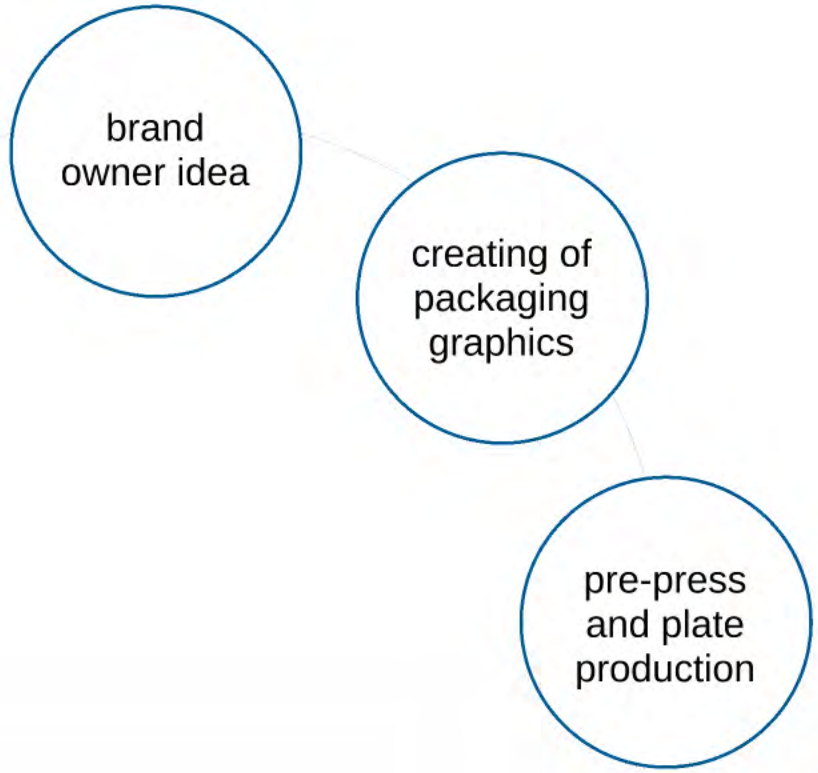

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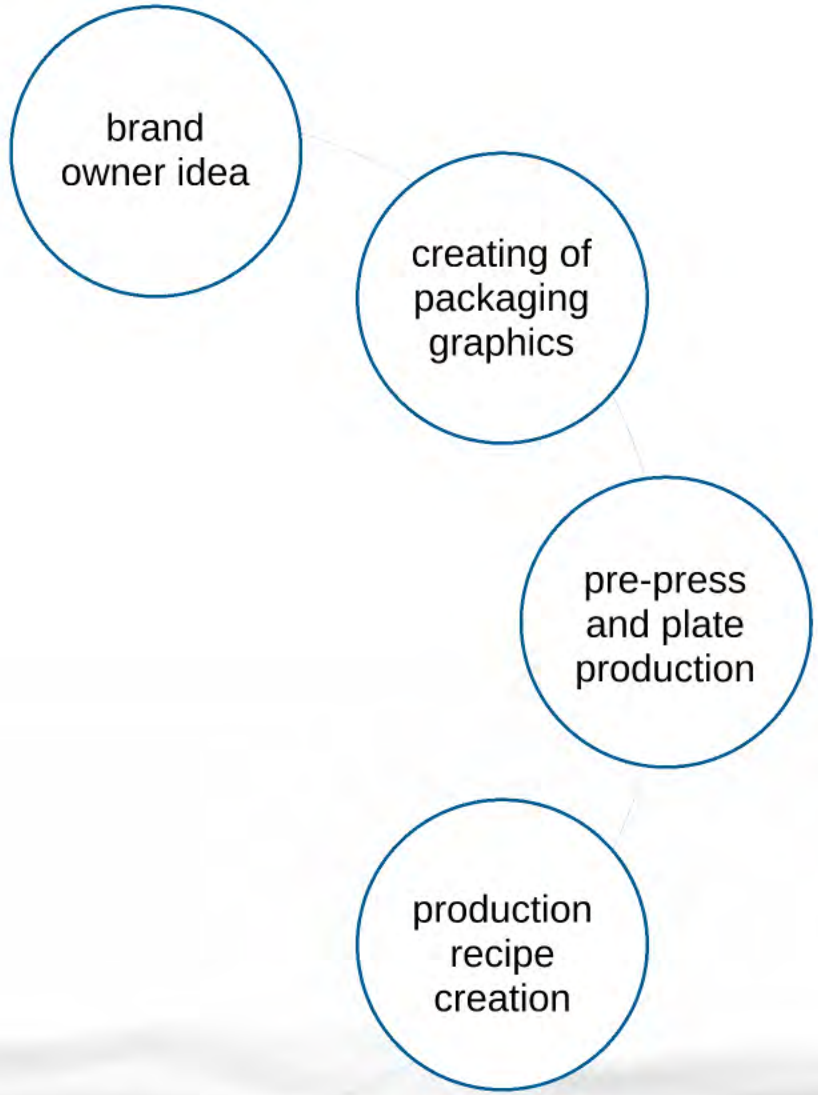

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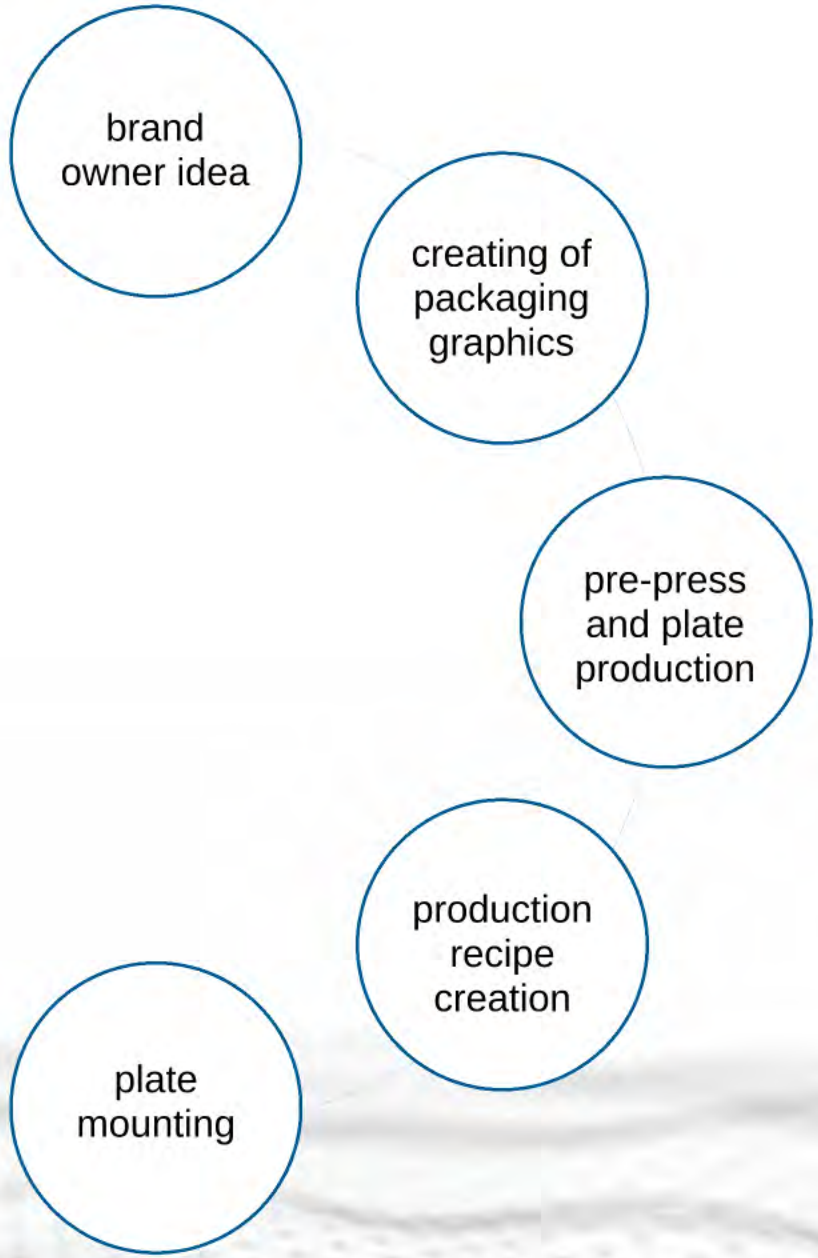

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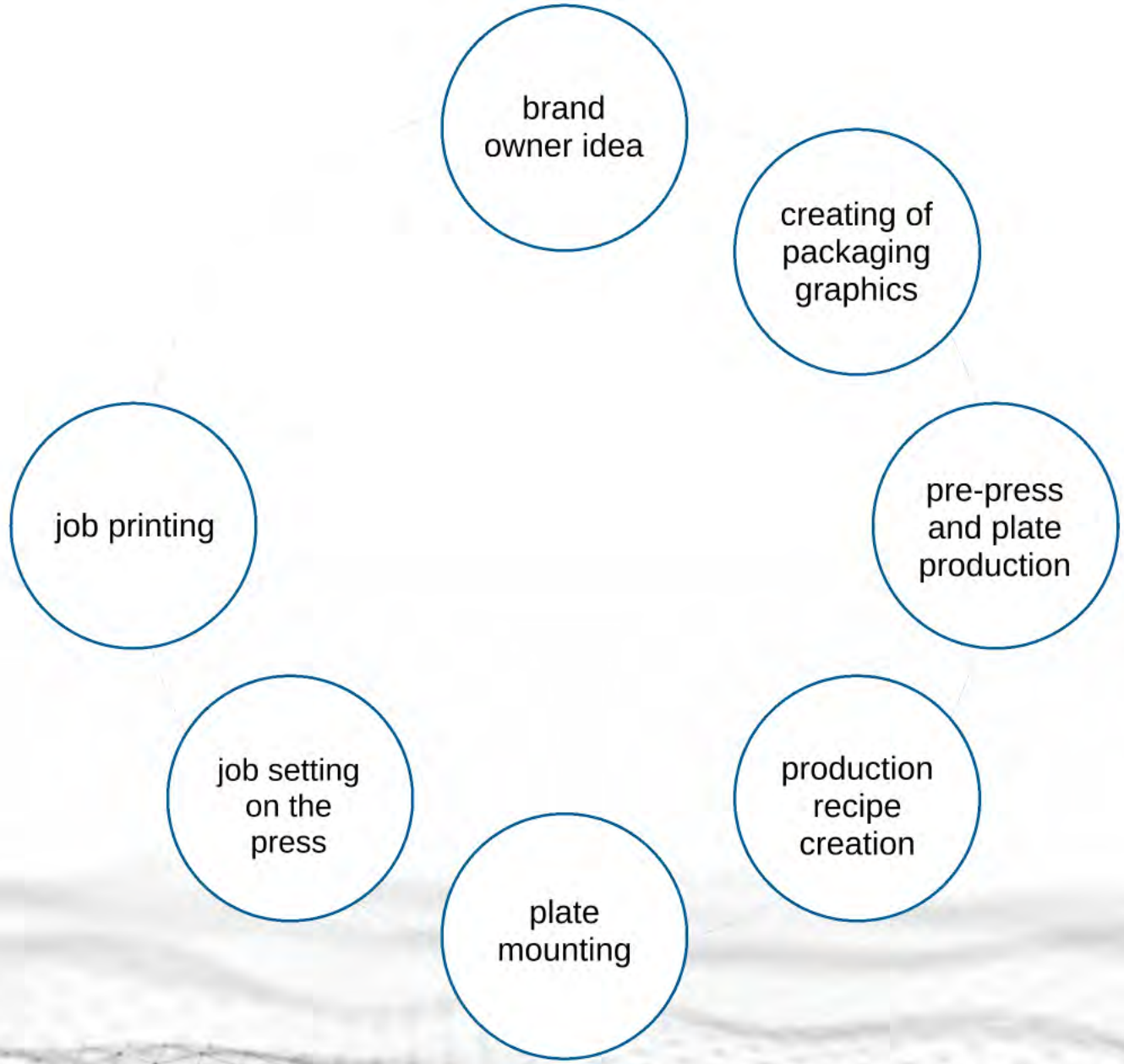

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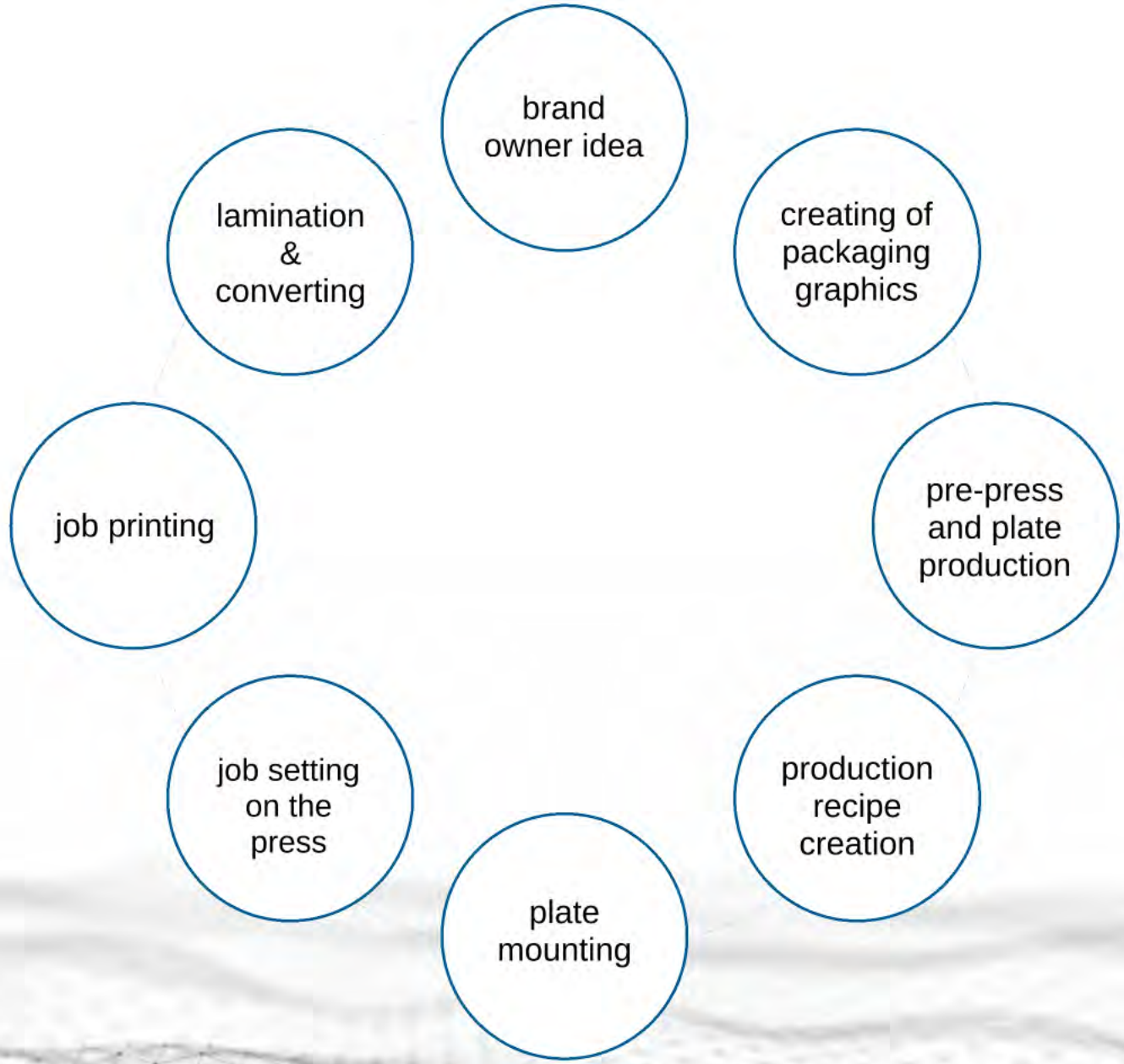

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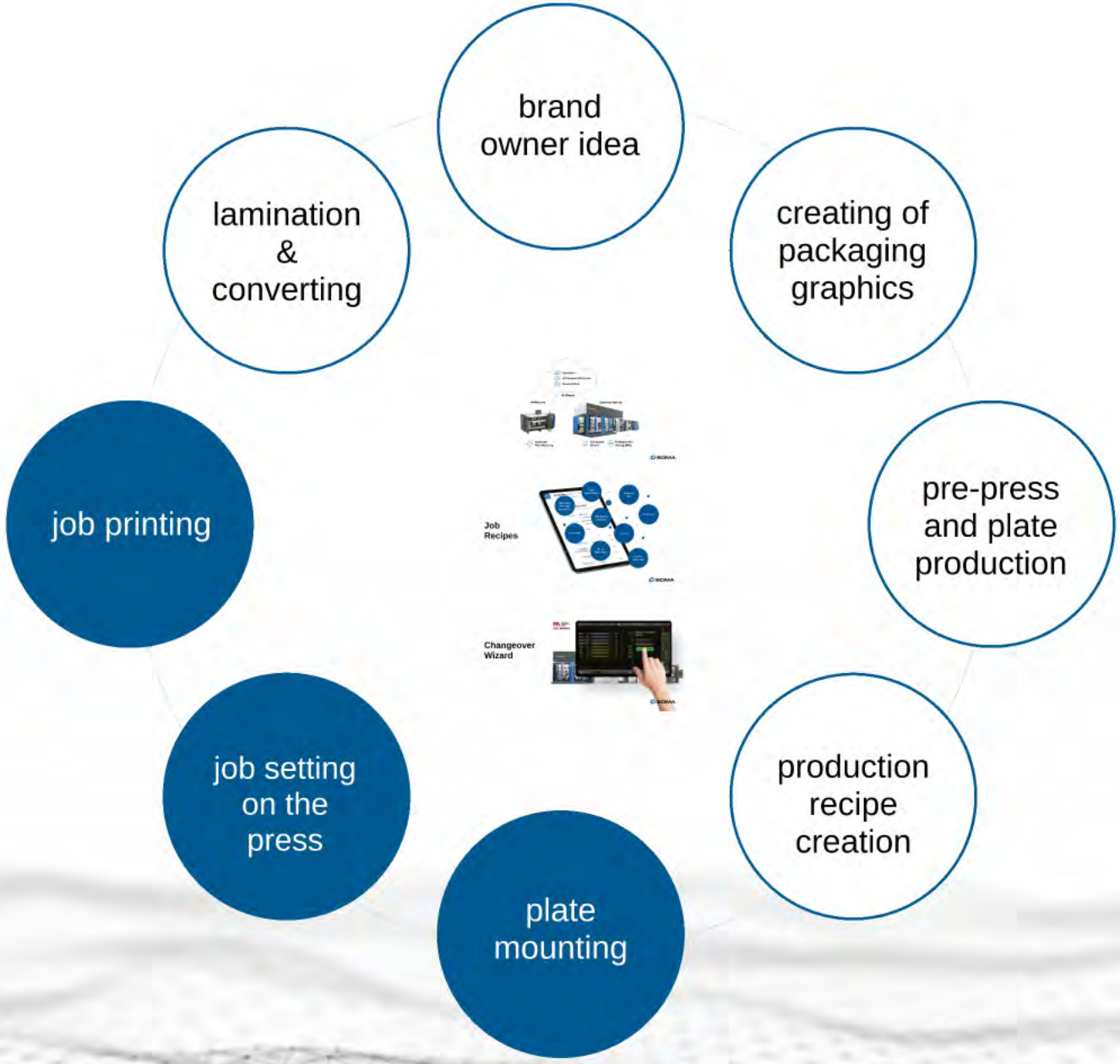
Flexo Automation



Supervision

Job Recipes & Protocols

Service S-Chat

S-Cloud

S-Mount

Automatic
Plate Mounting

Optima family

Changeover
Wizard

R&I

Intelligent R&I
Setting (IRIS)

SOMA

Job Recipes

SOMA

Changeover Wizard

Challenges in Flexography

personification & short runs & OEE

low education, low operator skills

suprerior print quality & consistency

energy savings

sutainable packaging solutions

Automation & AI

And what about AI?

SOMA

And what about AI?

It is enhanced automation

faster and much more powerful automation level

SOMA

UNIVERSE of other Industries

Case Studies of DNAi

AI...

AI...

has eyes

AI...

has eyes

has knowledge

AI...

has eyes

has knowledge

understands processes

AI...

has eyes

has knowledge

understands processes

can predict

AI...

has eyes

has knowledge

understands processes

can predict

can analyze and advice

AI...

has eyes

has knowledge

understands processes

can predict

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AI in Flexo Printing

Personal productivity tools

Enhanced automation tools

DOPLINT !

AI in Flexo Printing

Personal productivity tools

Enhanced automation tools

DOPLINT !

AI in Flexo Printing

Personal productivity tools

Enhanced automation tools

DOPLINT !

AI in Flexo Printing

Personal productivity tools

Enhanced automation tools

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Personal productivity tools

Enhanced automation tools

DOPLINT !

AI in Flexo Printing

Personal productivity tools

Enhanced automation tools

DOPLINT !

AI Implementation Benefits

ANSWERS GENERATED BY AI

Time Savings

30-50 %

Implementing AI to automatically set up print jobs based on client requirements can reduce lead times by 30-50%.

Energy Savings

10-20 %

Energy Cost Savings: Using AI to optimize machine energy consumption can save up to 10-20% energy, according to industry estimates.

Error Reduction

20-30 %

AI can reduce printing errors by providing recommendations for optimizing machine settings, potentially reducing errors by 20-30%.

Downtime Reduction

25-35 %

Predictive Maintenance: AI can identify the need for maintenance or repair before breakdowns occur, reducing repair costs and unplanned downtime by 25-35%.

Waste Reduction

50-70 %

AI can monitor and automatically adjust print parameters in real-time, maintaining consistent quality. This can lead to a 50-70% reduction in mismatched prints.

Repair Speed

20-40 %

With AI, fault diagnosis can be faster and more accurate, reducing repair time by 20-40%.

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What is next?

The answer is given

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Will your company be with it?

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