The future of the Print Media Industry – Smart Integration

Uli Bader | Zagreb, March 3rd, 2016
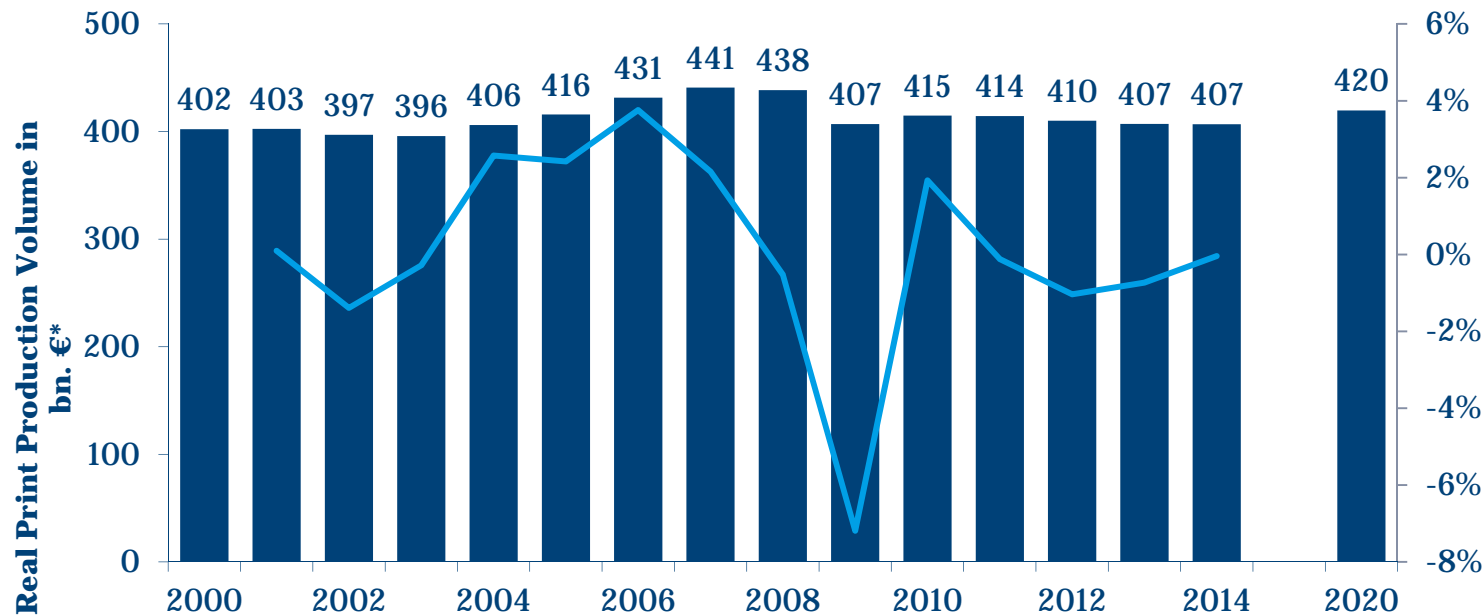
Printfest 2016

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Despite further penetration of electronic media worldwide print production volume (PPV) will grow moderately

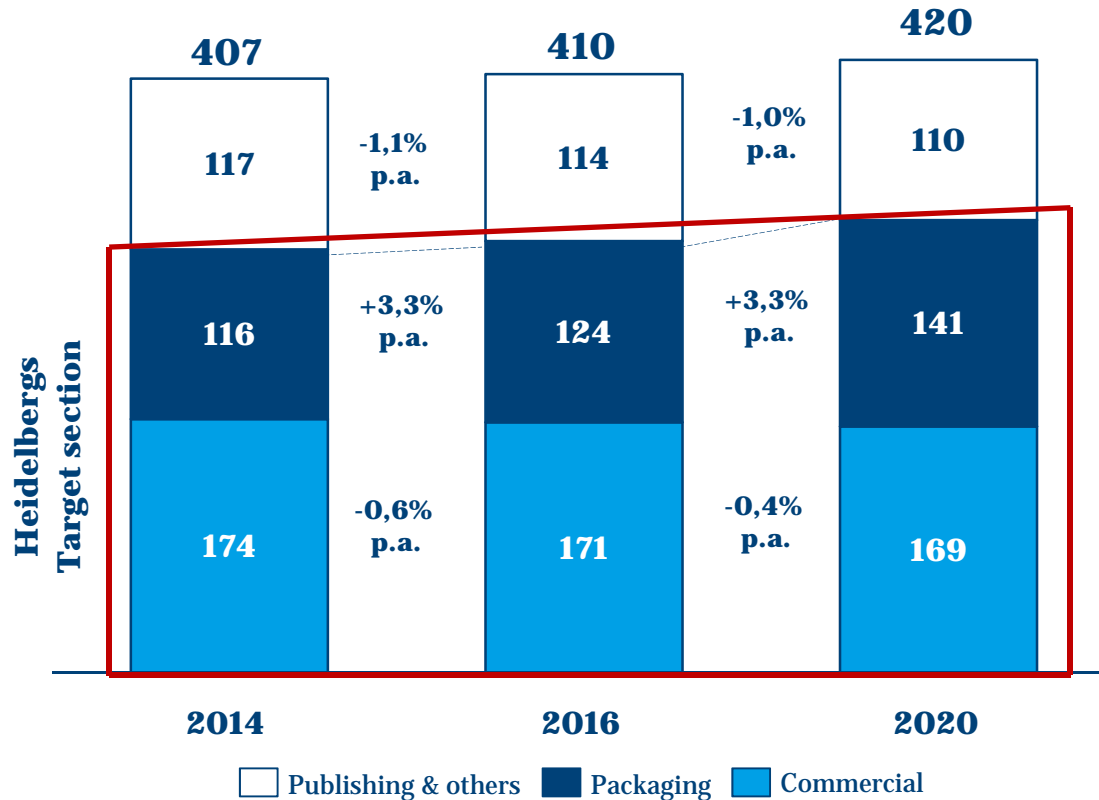**Global PPV, in Billion €**
Actual 2000-2014; Forecast 2014-2020

Annual Growth
(2014-2020)
Total: 0.5%

HDM serves both packaging & commercial print markets.
Leverage growth in packaging, building on solid foundation in commercial

Development of global print production volume, by segment (PPV in €bn)

	2014	2016	2020
Total	407	410	420
Publishing & others	117	114	110
Packaging	116	124	141
Commercial	174	171	169

Publishing & others: -1,1% p.a. (2014→2016), -1,0% p.a. (2016→2020)
Packaging: +3,3% p.a. (2014→2016), +3,3% p.a. (2016→2020)
Commercial: -0,6% p.a. (2014→2016), -0,4% p.a. (2016→2020)

Heidelbergs Target section

Packaging
→ Folding Carton
→ Labels
→ Flexibles

Commercial
→ Catalogs
→ Advertising
→ Financial/Legal
→ Directories

Legend: Publishing & others | Packaging | Commercial

Source: Heidelberg estimate – June 2015, industry statistics, PIRA, Jakkoo Pöyry, Primir (GAMIS), Global Insight
*Digital: Only Digital Production Devices are taken into consideration ----- *Base Year 2009*
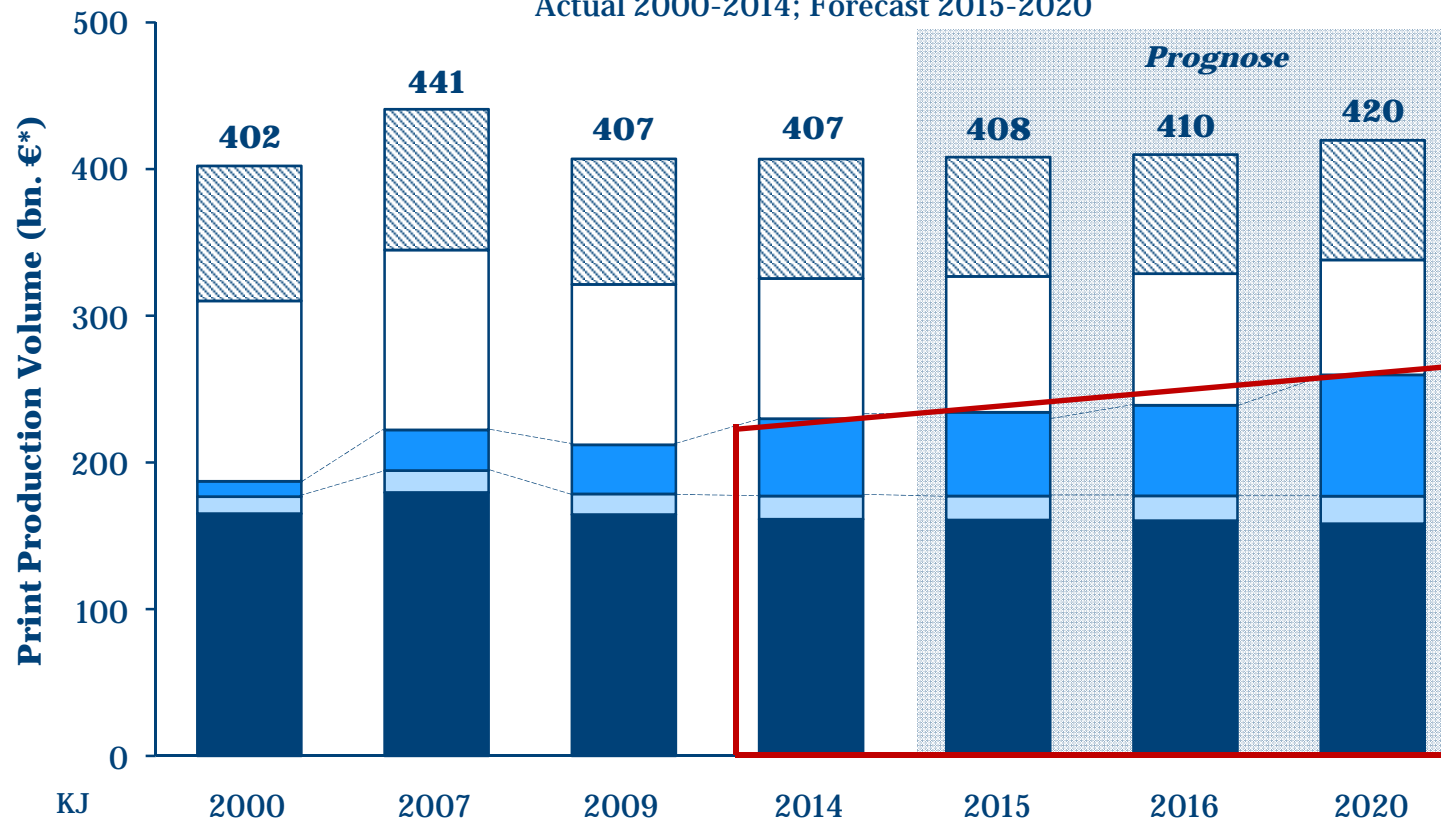
Worldwide PPV
Digital technology important for growth

**Development of Printing Process Shares,
by Print Production Volume (bn. €*)**

Actual 2000-2014; Forecast 2015-2020

Prognose

402 **441** **407** **407** **408** **410** **420**

Print Production Volume (bn. €*)

500 — 400 — 300 — 200 — 100 — 0

KJ   2000   2007   2009   2014   2015   2016   2020

Annual Growth
(2014-2020)
Total: 0.5%

Other[2]:   **0 %**

Web Offset: **- 3 %**

Digital: **8 %**

Flexo[1]:   **3 %**

Sheetfed Offset: **0 %**

Heidelberg's Target Area
Annual Growth
(2014-2020): 2 %

1   Gallus /Heidelberg relevant part only (Folding Cartons & Labels)
2   Gravure, Screen, Letterpress and not Gallus/ Heidelberg relevant Flexo
Source: Heidelberg estimate– June 2015, Industry statistics, PIRA, Jakkoo Pöyry, Primir (GAMIS), Global Insight
Digital: Only Digital Production Devices are taken into consideration ----- *Base Year 2009

Development of the Print Media Industry

→ Until 1995, communication in print production was entirely walk, talk and paper

| PREPRESS | PRESS | POSTPRESS |

→ 1995 The internet started to grow; Amazon was launched

→ 1996 Google was launched

→ 2016: Full integration with Prinect

| WEB & MEDIA | Offset & Digital MIS | Offset & Digital PREPRESS | Offset & Digital PRESS | Offset & Digital POSTPRESS | Prinect |

What are the ongoing trends in the global printing market?

- → Increased demand for application know-how
- → the market demands more standardization
- → press run decreases while number of jobs increase
- → Need of flexibility and uptime to match shipping targets
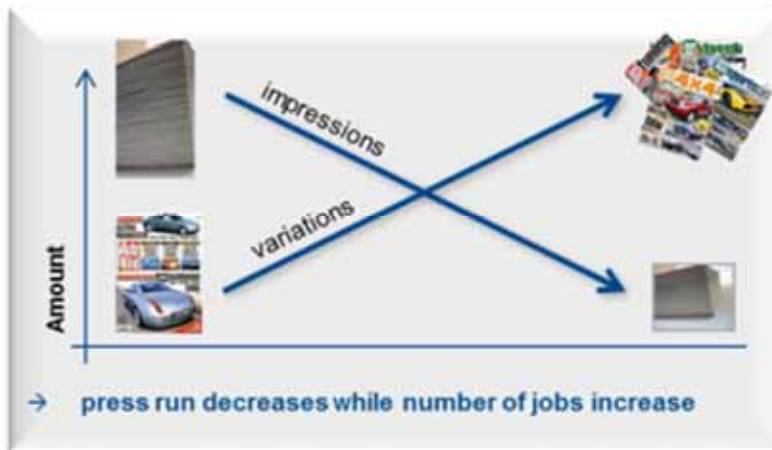
Print shops are changing, too ...

Für viele Druckereien gehört die Kleine einfach zur Familie

from a small craftsman ...

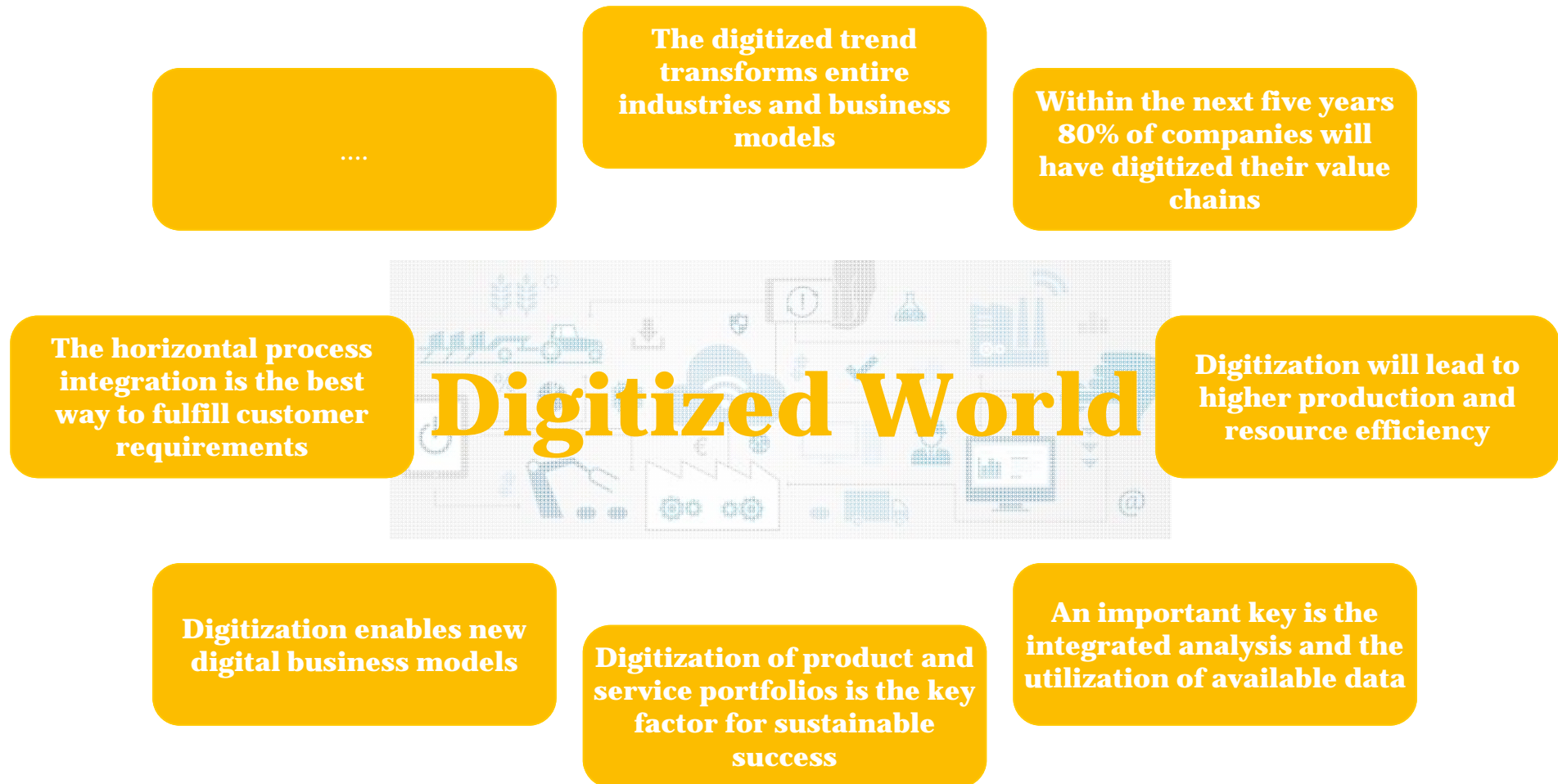**... to an industrial enterprise**

Hallmarks of our industry.

→ Individualization or hybridization of products (linking of production and services)

→ Providing additional services

→ Integration of customers and partners into business processes and value chain

→ Embedded systems as well as (partly) autonomous machines

→ Increasing interconnectivity

= Digitized World

Chances and challenges.
Relevance for Heidelberg and for our customers.

....

The digitized trend transforms entire industries and business models

Within the next five years 80% of companies will have digitized their value chains

The horizontal process integration is the best way to fulfill customer requirements

Digitized World

Digitization will lead to higher production and resource efficiency

Digitization enables new digital business models

Digitization of product and service portfolios is the key factor for sustainable success

An important key is the integrated analysis and the utilization of available data

Smart Factory: Production environment in which production and logistic systems organize themselves; based on Cyber-Physical Systems which communicate over the Internet of Things and integrate customers and partners over the Internet of Services.
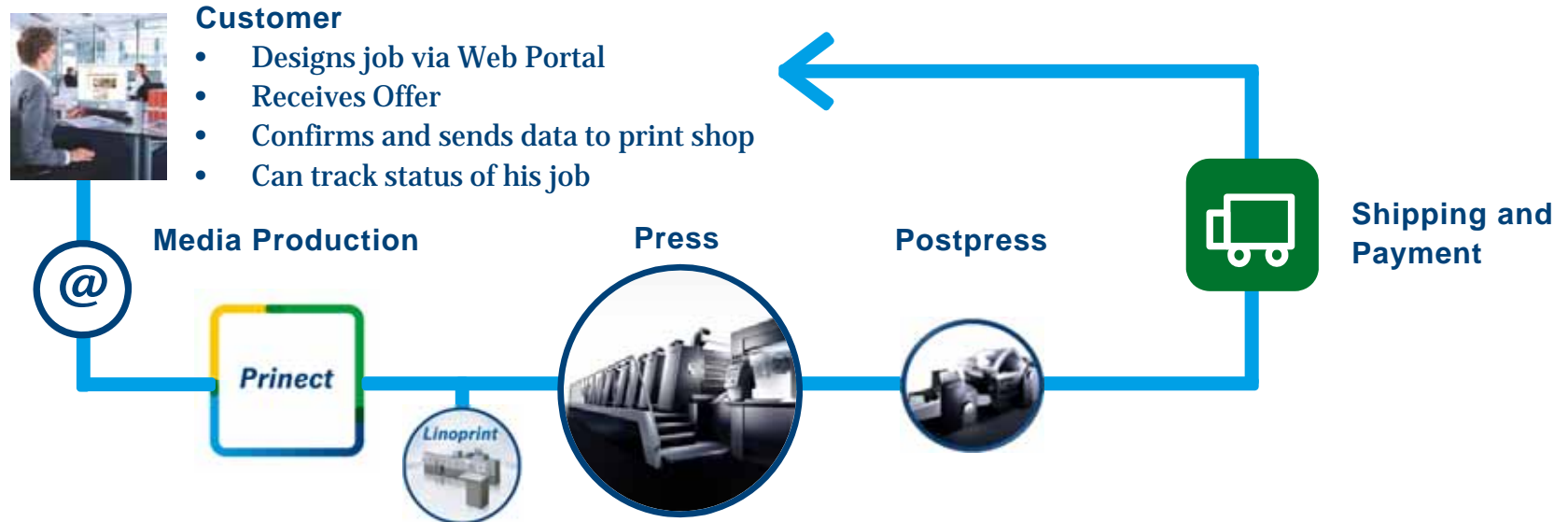
Source: Wikipedia

Prinect enables smart integration

WEB & MEDIA	Offset & Digital MIS	Offset & Digital PREPRESS	Offset & Digital PRESS	Offset & Digital POSTPRESS

10

Prinect smart integration works *along the entire value chain* and *across company boundaries*

Customer
- Designs job via Web Portal
- Receives Offer
- Confirms and sends data to print shop
- Can track status of his job

Media Production

@

Prinect

Linoprint

Press

Postpress

Shipping and Payment

→ Prinect smart integration covers print buyer integration, MIS and media production and digital workflow

→ Isolated, optimized production cells work together in a fully integrated, automated, and optimized production flow

→ Prinect integration extends beyond the boundaries of a print-shop and includes customers and services

The heart of Heidelberg's Prinect smart integration is a Speedmaster Press - a cyber physical system

→ *Human-Machine Work cell*

→ *Integrated* via JDF Network

→ Production *data analysis* with Color Workflow and Analyze Point

→ *Autonomously* making production decisions

→ Delivering *real time data*

→ Connecting to the *Cloud* for OEE Benchmarking

→ Connecting to *Internet* Service Network for Remote Monitoring

→ Using *Simulation* in the Prinect Color and Paper Stretch Compensation Workflows

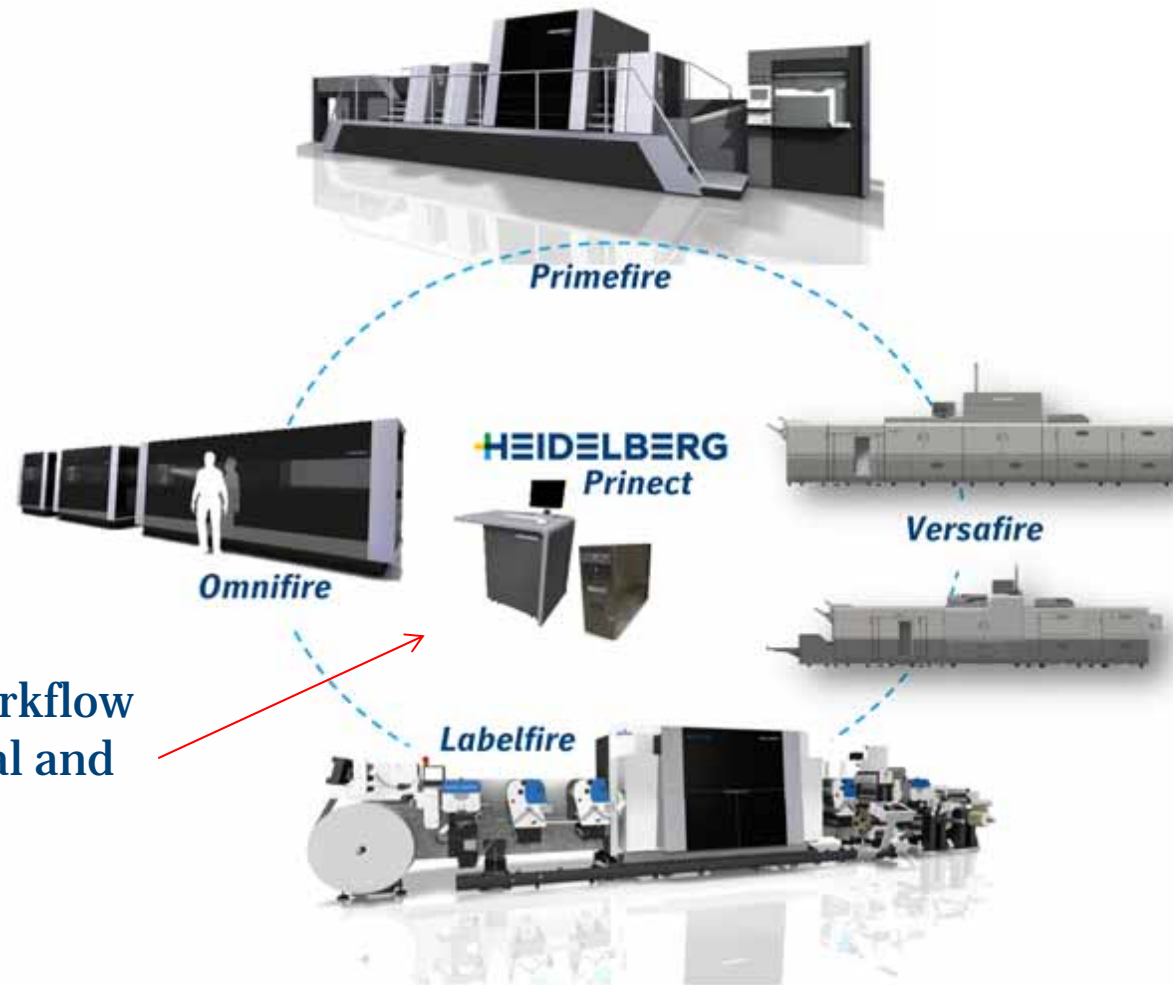Automatic Plate Change

Automatic ink supply

Automatic foil supply

Inline measurement

Inline inspection

Product portfolio in digital and offset.
Integration is key.

One central workflow is driving digital and offset presses.

# Prinect smart integration connects the core production working cells in a print shop

→ Prepress – Press – and Postpress are connected through the JDF-Network

→ Digital Process Information is forwarded with the print products along the entire production chain and amended as processing continues

→ Individual production steps are independent but connecting automatically and autonomously based on the JDF information

→ *Prinect Smart Automation* makes autonomous process decisions by adapting processing steps based on production information (JDF, pdf)
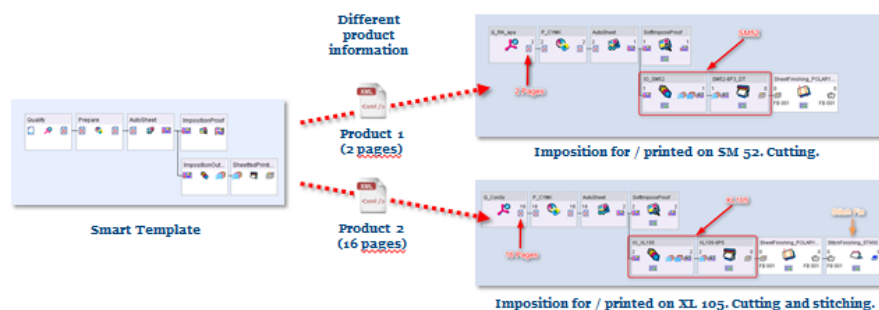
Prinect Smart Automation autonomously selects the appropriate printing process

Selection of print process and processing of order data depends on product information:

- → Number of printed copies
- → Number of pages
- → Print-Colors
- → Format
- → ......

Digital Press

Prepress

Offset Press

Postpress
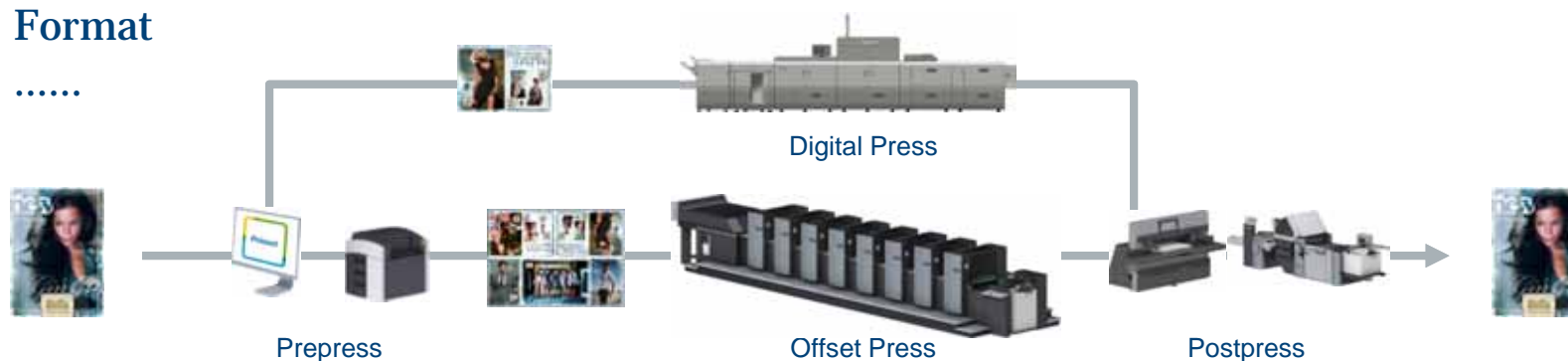
Smart Template

Process Net 1

Process Net 2

Automatic paper stretch compensation

An example for efficiency gain by simulation

→ The stretching behavior of paper types is described in a complex software model depending on paper, color, ink, ink coverage, press, etc.

→ This model is used to simulate the effects of paper stretching for each plate before imaging.

→ The results of this calculation allow modification of plate imaging data accordingly before imaging.
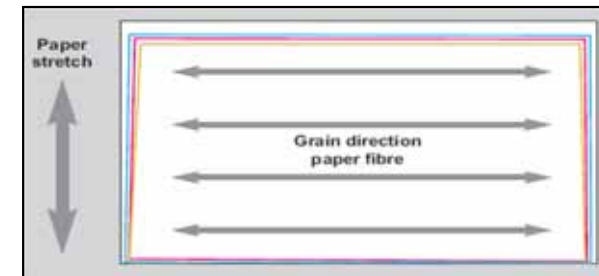
Customer benefits

→ Saving of printing plate sets by avoiding at least one set of plates per compensated job.

→ Saves make-ready times by avoiding manual adjustment of register or manual compensation.

→ Saves waste by compensating before the first sheet is printed.

Paper stretch

Grain direction paper fibre

Prinect smart integration connects the printers MIS with the core production of a print shop

Offset & Digital MIS	Offset & Digital PREPRESS	Offset & Digital PRESS	Offset & Digital POSTPRESS

→ MIS is connected through the JDF-Network

→ Digital Process Information is forwarded with the print products along the entire production chain and amended as processing continues

→ *Prinect Smart Automation* makes autonomous process decisions by adapting processing steps based on production information from MIS
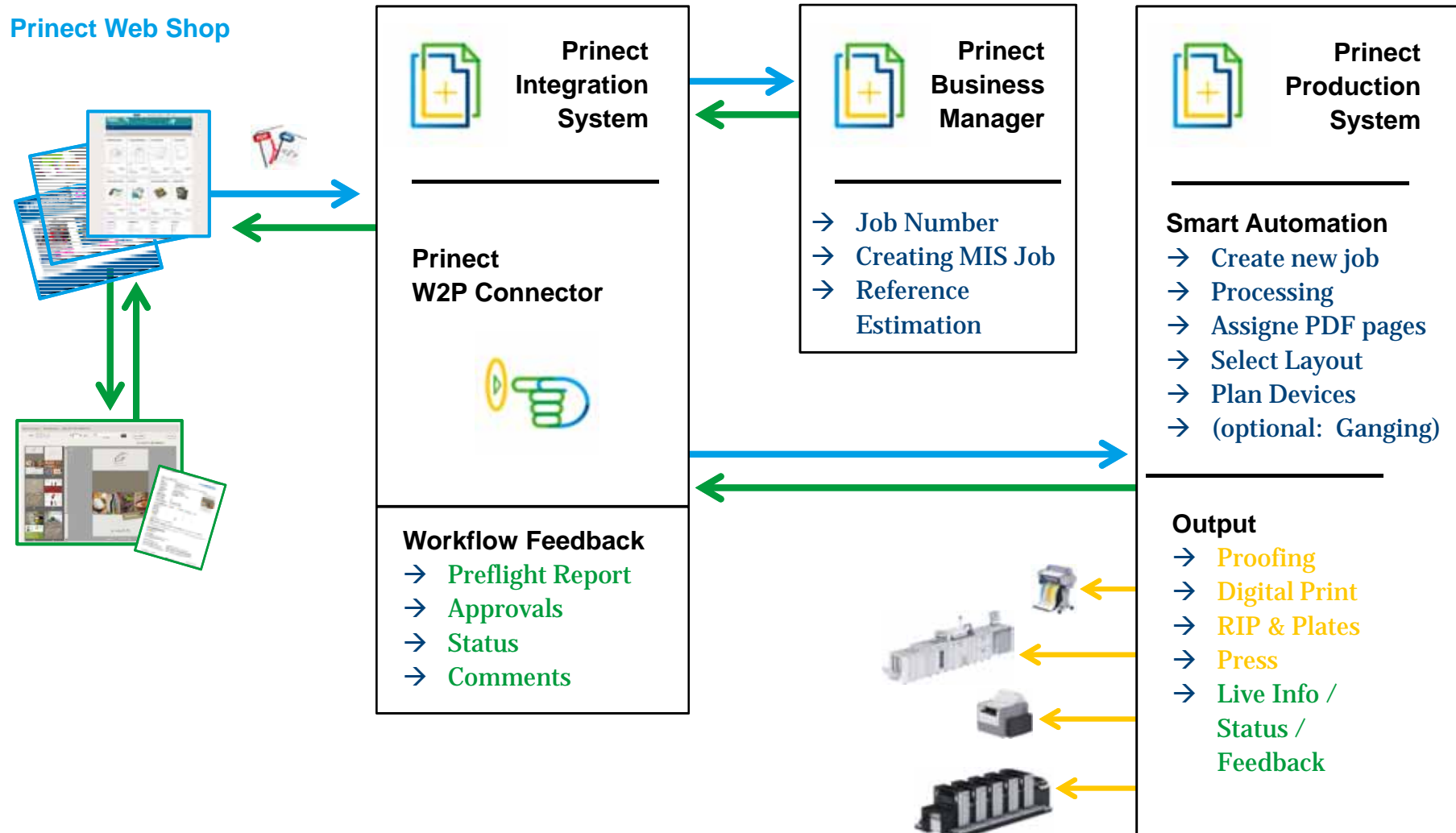
Prinect smart integration connects print buyers to the print shops

WEB	Offset & Digital MIS	Offset & Digital PREPRESS	Offset & Digital PRESS	Offset & Digital POSTPRESS

→ Print buyer are connected to the print shop through the internet

→ Prinect Portal, the new browser-based tool to handle and manage print orders; full order handling and appropriate production management

→ Prinect Webshop, new, for the automated sale of standard print products

Prinect Web-to-Print workflow integration

Prinect Web Shop

Prinect Integration System

Prinect W2P Connector

Workflow Feedback
→ Preflight Report
→ Approvals
→ Status
→ Comments

Prinect Business Manager

→ Job Number
→ Creating MIS Job
→ Reference Estimation

Prinect Production System

Smart Automation
→ Create new job
→ Processing
→ Assigne PDF pages
→ Select Layout
→ Plan Devices
→ (optional: Ganging)

Output
→ Proofing
→ Digital Print
→ RIP & Plates
→ Press
→ Live Info / Status / Feedback

Smart integration with media management goes beyond printing and offers new business opportunities

Print

Brochures / Price lists

Catalogues

Web Sites

Web Sites

Web-to-Print

Print-to-Web

Online Shop

Social Media

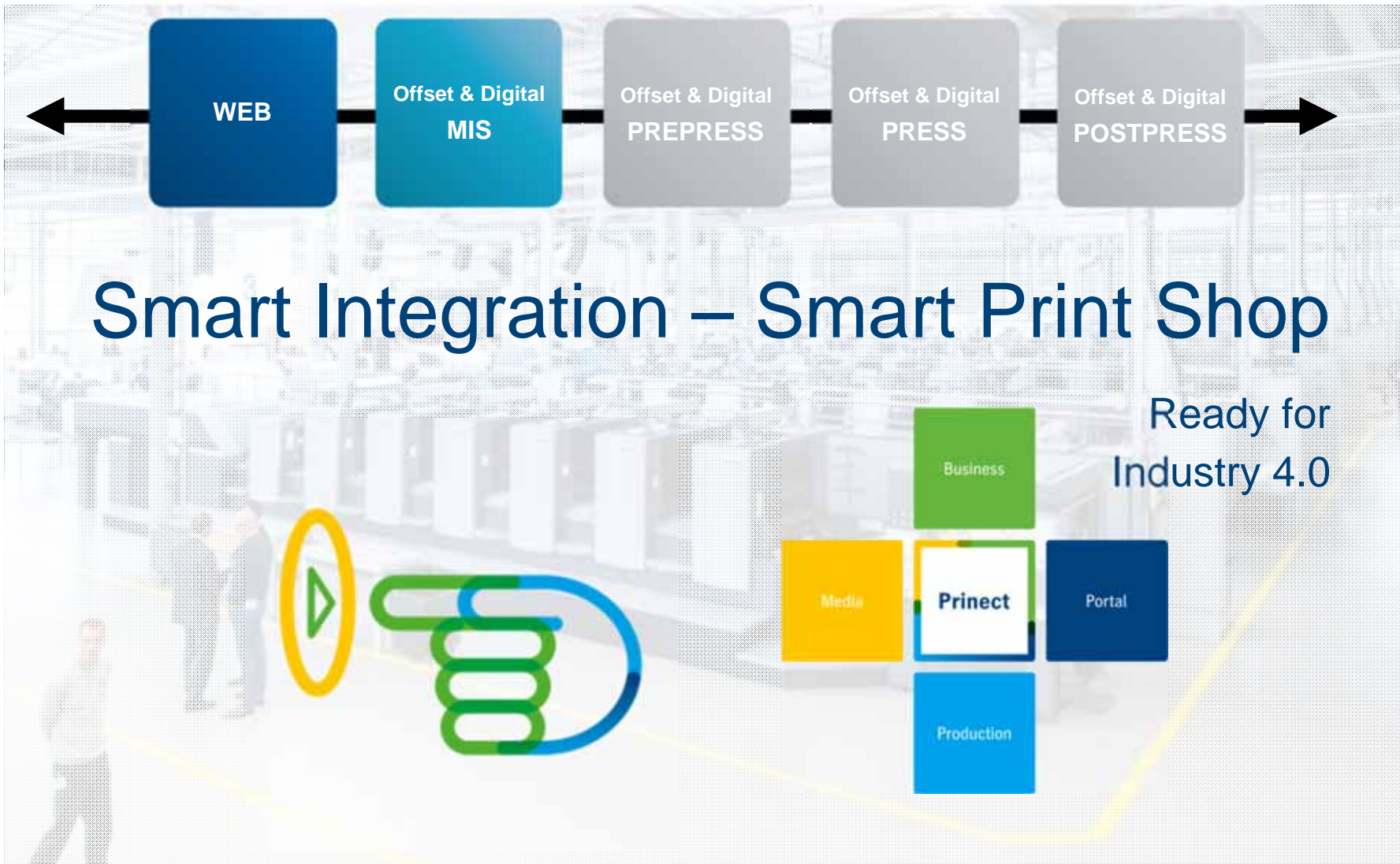## Mobile Devices

Smart Phone / Tablet Apps

Web Sites

Social Media

Heidelberg: partner for a digitized world

WEB | Offset & Digital **MIS** | Offset & Digital **PREPRESS** | Offset & Digital **PRESS** | Offset & Digital **POSTPRESS**

Smart Integration – Smart Print Shop

Ready for Industry 4.0

Business
Media · Prinect · Portal
Production

Thank you.

Uli Bader

Print*fest* 2016

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