

Digital Printing for Newspapers: An Outlook

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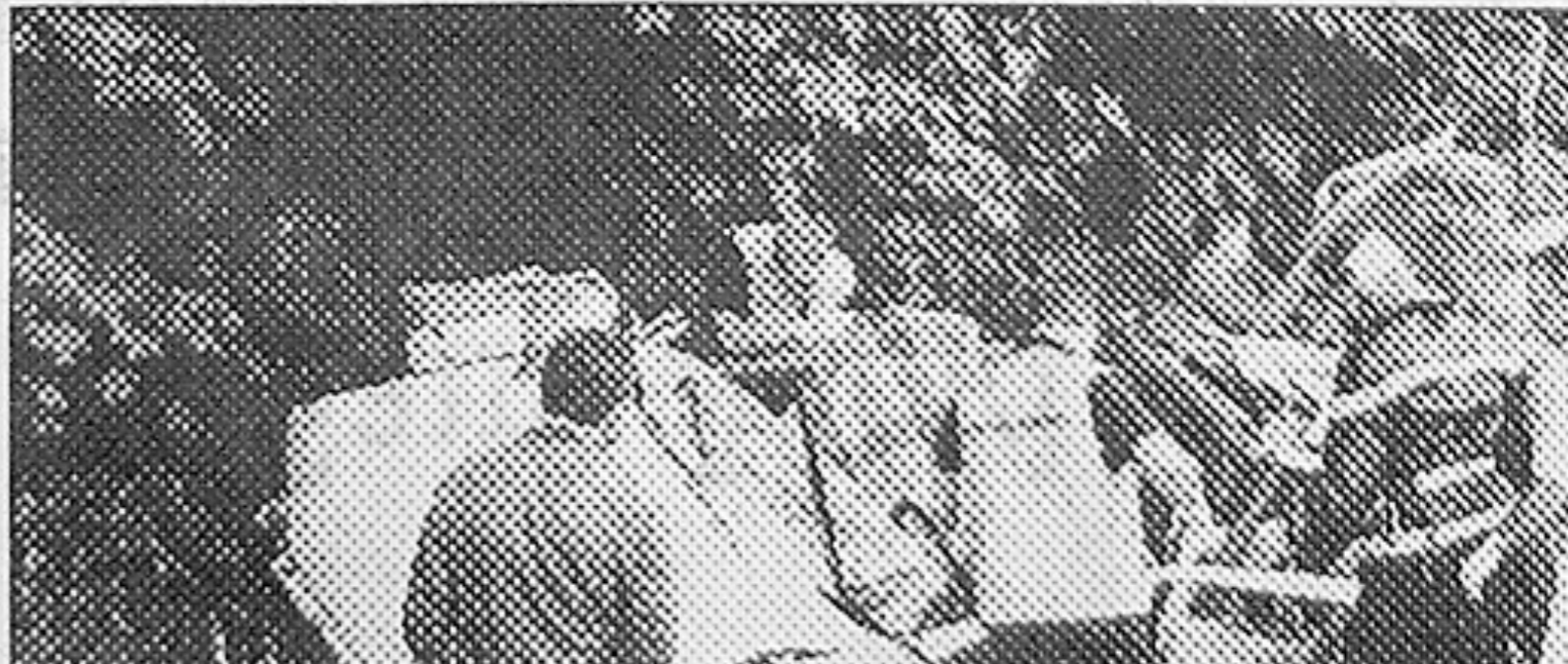
Digital newspaper printing

- High expectations in the 1990s
- Digital printing as an ad-on technology to newspaper printing?
- Digital printing as a replacement for offset and flexo?

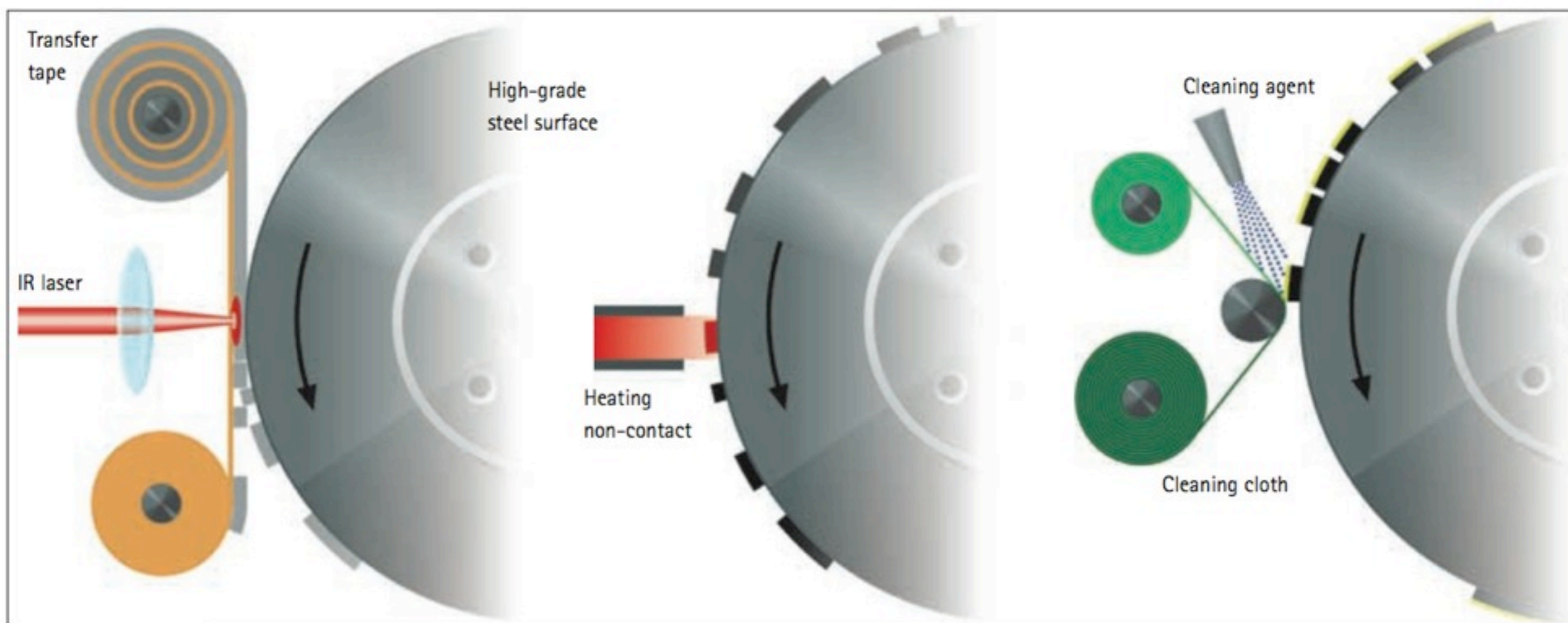
Digital imprinting, drupa 1995

Un automobiliste n écrasé dans sa voit

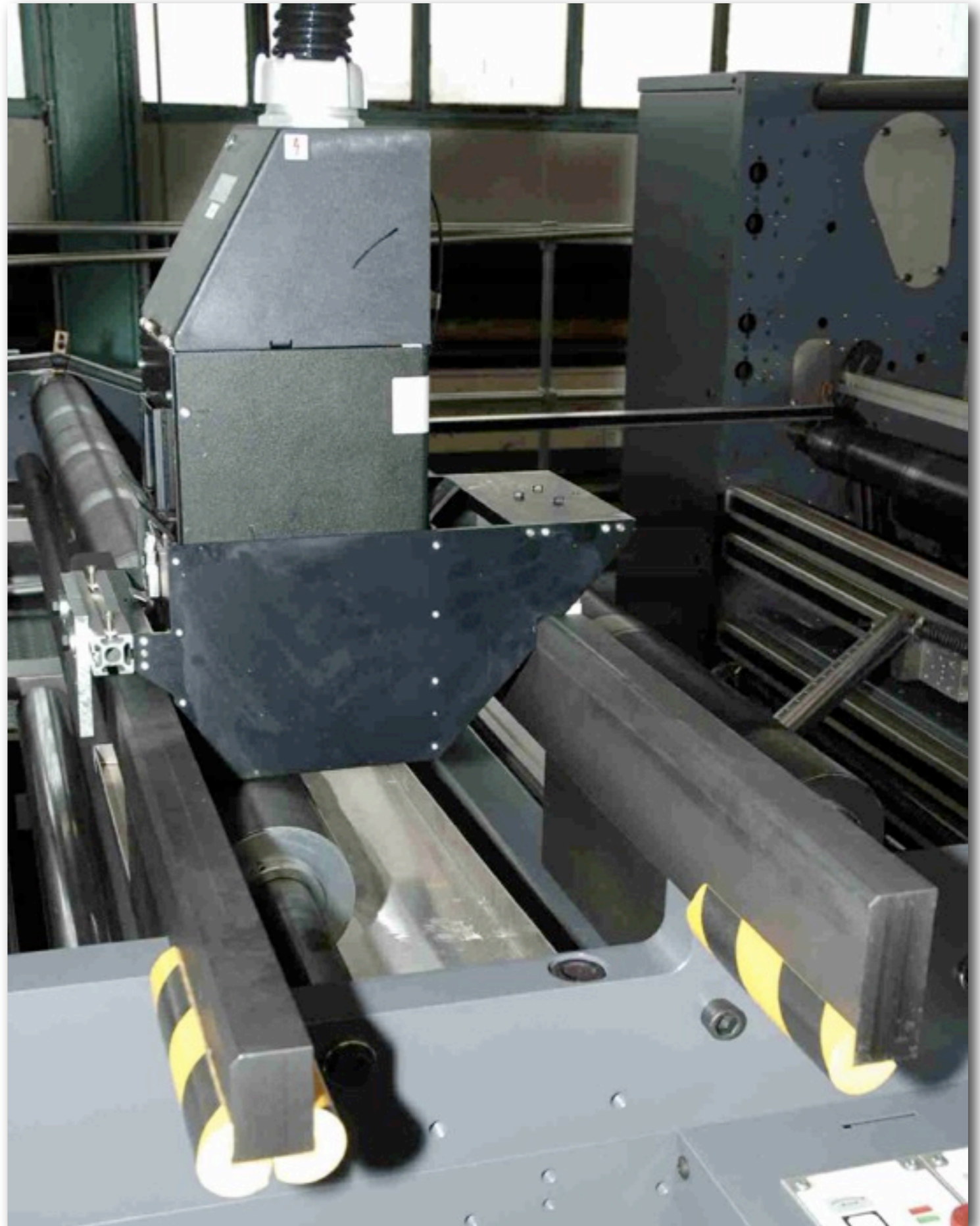
*Le chargement de bois d'un semi-remorque a écrasé une voiture, à la hauteur du pont HBL s
Jeanne-d'Arc et Freyming-Merlebach. Le conducteur, Frédéric Dupuis, de Freyming-Merleb
enceinte de sept mois, a été hospitalisée en état de choc.*



Direct imaging technology for newspaper printing?



Digital imprint unit in
a newspaper press
(Kodak, manroland),
2008



Digital newspaper printing

- WAN-IFRA conference in 2001 in Amsterdam
- WAN-IFRA Special Report 3.32 (2001)
“Digital printing for newspapers?
Opportunities and perspectives”

14 4 Individual examples of the state-of-the-art in digital printing

4 Individual examples of the state-of-the-art in digital printing

4.1 Computer-to-press

The main target when using computer-to-press technology is the drastic reduction of the conventional make-ready times made possible by a "digital plate change", whereby the subsequent offset printing process should enable a run to be printed in the typical fashion, computer-to-press is, however, in principle not suited to printing individual copies or very short runs.

With regard to imaging, the design of several computer-to-press systems has become established on the market. The imaging systems of all solutions are generally products from Creo/Chromalox, Prepress or Screen, yet it is reasonable to expect that other providers, such as Heidelberg, will bring imaging units to the marketplace in the future.

With computer-to-plate inside the press, a photosensitizer or thermal plate(s) is used as the printing forme and is imaged with a laser system of varying wavelength. To improve the imaging time several laser beams are usually used in parallel. The printing forme is changed internally and automatically by a mechanical system, which is generally fixed inside the plate cylinder. Films are supplied from a reel cassette and the printed form must be removed automatically after the printing procedure. Printing press manufacturers have been able to build on the experience of traditional plate change devices in designing their form plate changing systems. Both conventional wet offset and waterless offset are used, depending on the type of plate system selected.

So far the only machines to have been released onto the market are sheet-fed offset presses. The application of these imaging concepts for web-fed offset is, in principle, technically feasible but has not yet been reached upon by the manufacturers for strategic market-specific reasons.

Examples of presses with these technologies include Heidelberg Speedmaster 52, Heidelberg Quickmaster 52, K55 14 Kuro, Screen Enigma, Ryobi 50 and Komori-Akabei 50 C-03. More and more offset machines are being offered with these technologies, some of which combine conventional printing units with 20 units. Table 4 shows a selection of important properties of some of the models currently on the market.

The first platform, hence "genetic" computer-to-cylinder offset press is the 900web by MAN Roland, introduced at DRUPA 2006. The impression cylinder is imaged using the T33 technology (Thermal Transfer Inkjet) and can be deleted and moved to the press after each job has been completed. This process was developed in a joint venture with Creo/Chromalox. The entire area of plate logistics has been optimized. The individual partial processes are shown in Figure 6: The laser to laser copy the ink is applied to a steel cylinder dot by dot with the help of a laser system. After being thermally treated for solidification, the unit is ready for use after printing. Once the job has been completed the surface of the impression cylinder is cleaned and is then ready for the next imaging procedure.



Figure 6: The T33 technology, used in the 900web, the name of the first genetic computer-to-cylinder press on the market.

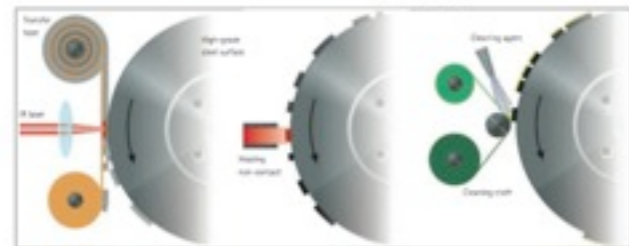


Figure 6: The T33 technology, used in the 900web, the name of the first genetic computer-to-cylinder press on the market.



Figure 9: Screen SmallMark, a high speed inkjet system for industrial applications with 300 dpi and up to 2.5 m/s printing speed

Digital printing for newspapers? Opportunities and perspectives



Ifra Special Report **3.32**

Strengths of digital printing

- Personalisation
- Flexibility
- Fast change over
- No waste
- Low labour costs

Why digital newspaper printing?

- “Distribute and Print” instead “Print and Distribute”
- Future scenarios at NZZ
- Field tests in the Nordic
- The home newspaper on A-day even at remote places
- Digitally printed small volume newspapers titles, produced close to POS



Why digital newspaper printing?

- Digitally printed local and customised editions below 1000 copies, inserted into main jacket
 - Field test of Océ in 2004
- Digital imprint units for ads and latest news
 - drupa 1995 KBA with Scitex
 - NEXPO 2003 DICOknit, manroland
 - drupa 2008 manroland with Kodak

What became reality so far?

- “Distribute and Print” instead
“Print and Distribute”? **No!**

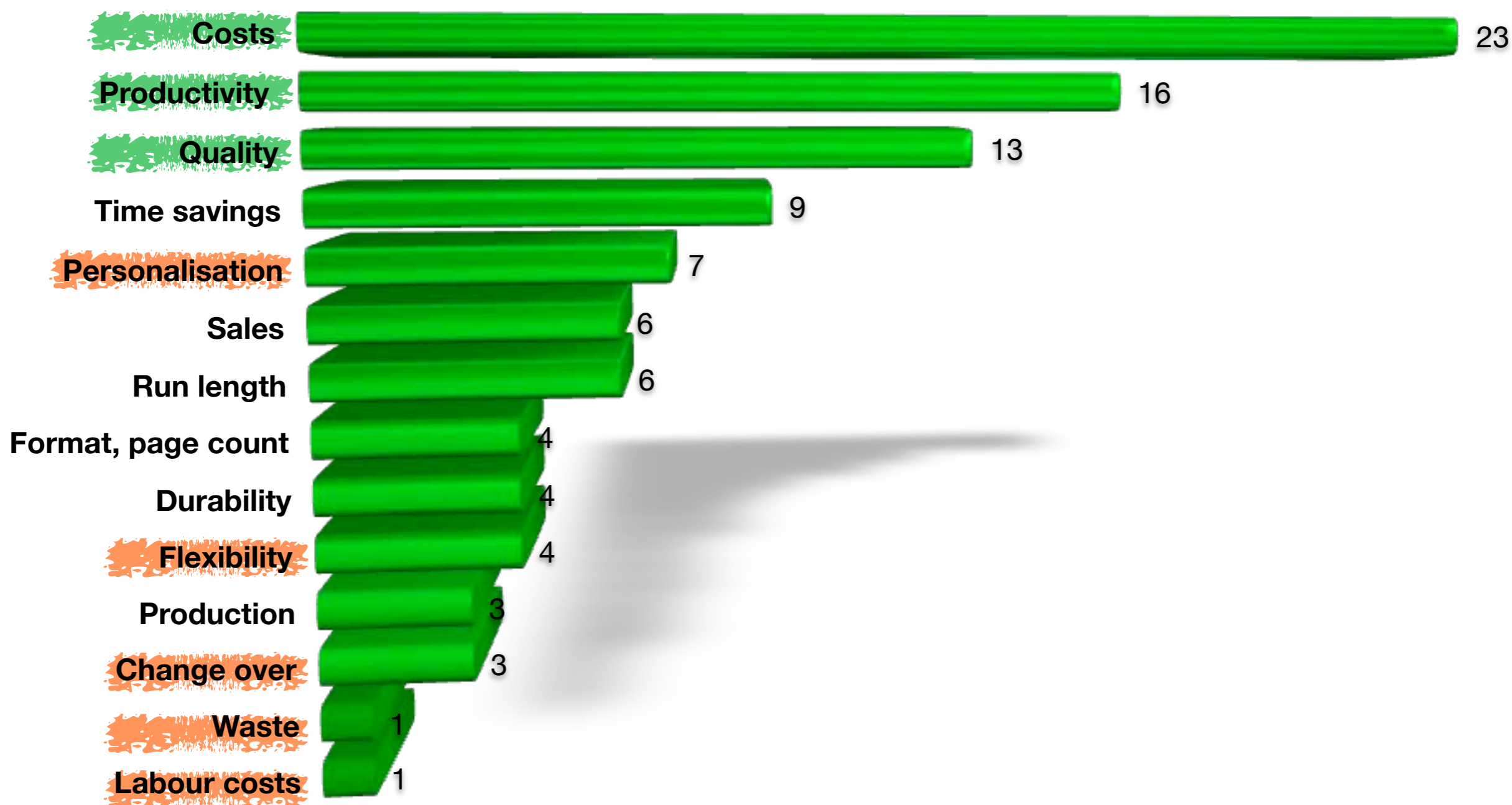
- Remotely printed newspaper titles? **Yes!**
 - Press Point, Newspaper Direct
 - Océ Digital Newspaper Network since 2001
 - Digital printing at large events – Olympics

What became reality so far?

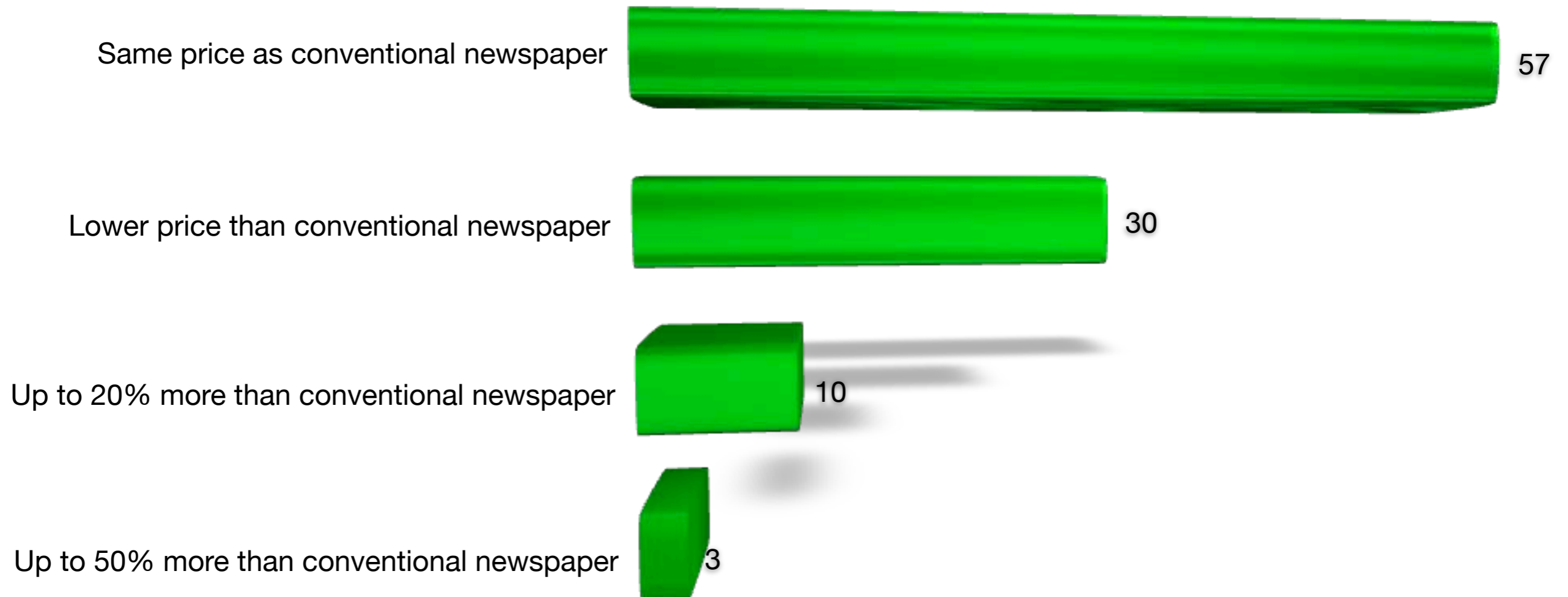
- Digitally printed personalised local editions? **No!**
 - Versamark at IFRA Expo Barcelona in 2001
 - Océ presentation at drupa 2004

- Digital imprint units for advertising or latest news? **Not yet!**

In which areas do newspaper printers expect advantages from digital printing? (%)



Expected costs per copy (%)



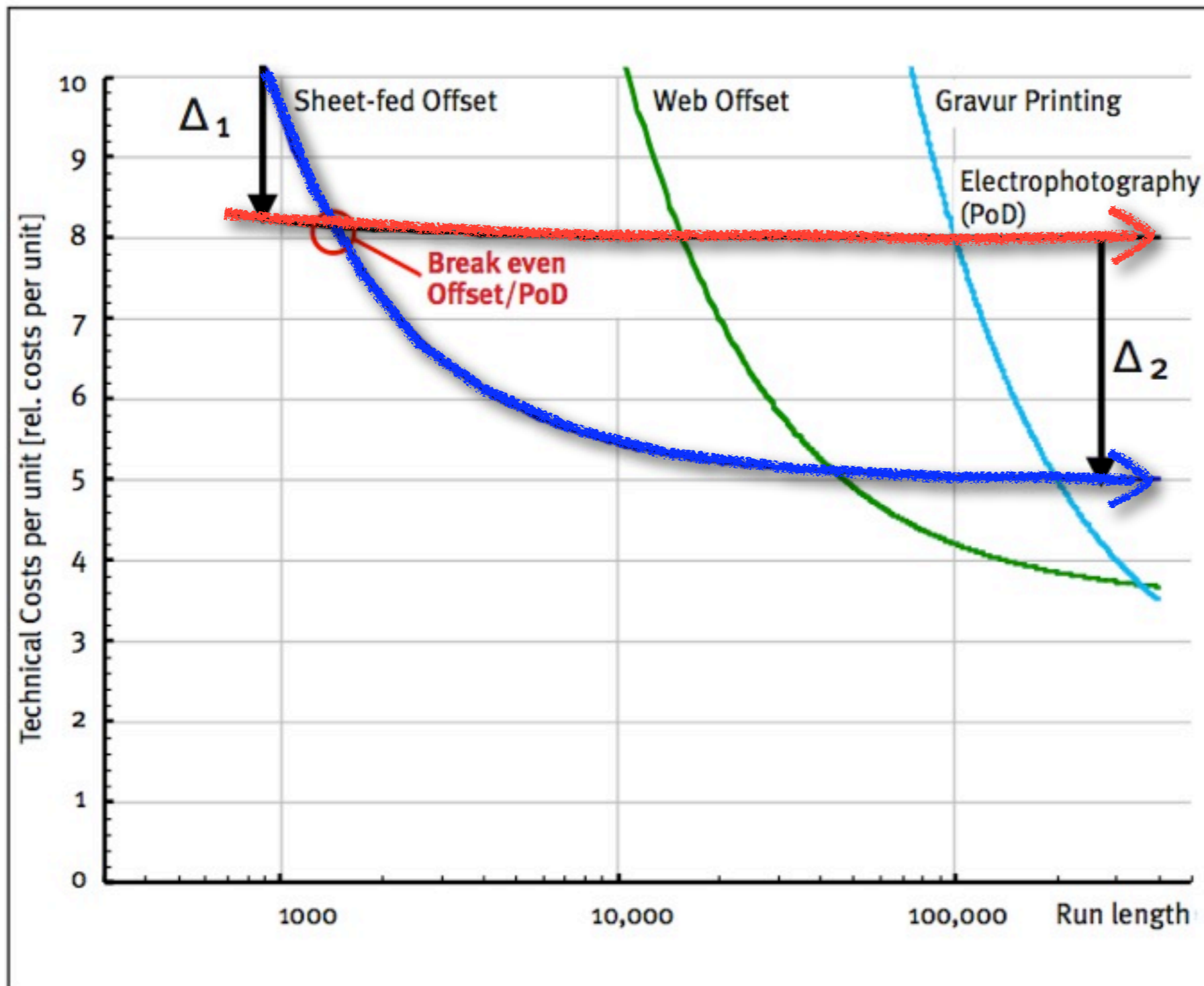
Estimating the significance of various production concepts, 2001

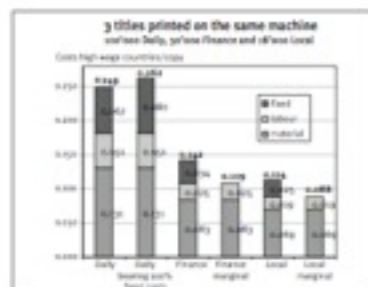
Topic	Will become more important	Don't know	Will become less important
1. Conventional mass production	76 %	12 %	12 %
2. Conventional mass production with small regional/target group-specific sections	100 %	0 %	0 %
3. Individualised mass production	41 %	47 %	12 %
4. Electronic distribution and local print production	71 %	24 %	5 %
5. Electronic distribution for personal print	47 %	24 %	29 %
6. Individual electronic/mobile newspaper	71 %	12 %	17 %

Cost per copy

- Low cost per copy in conventional newspaper printing
- Digital printing: prices of consumables – ink and toner
- “Click Charge” models
 - Investment costs
 - Consumable costs
 - Usage costs

Cost per copy over run-length





Therefore we could argue that in the case of a house belonging to a daily and billing its according the marginal costs principle, the costs are shared by the daily. On the other hand, if the costs are shared, the closing of a title will increase the cost for the two remaining titles.

Figure 6

Scenario 5, for middle wage countries, costs shared by the 3 titles

	Daily			Finance			Local
	cost/year	cost/issue	cost/copy	cost/year	cost/issue	cost/copy	
Paper costs	3'450'982	11427	0.114	522'959	2011	0.067	238'156
Ink costs	303'092	2004	0.020	36'531	141	0.005	17'513
Plates costs	212'608	704	0.007	91'520	352	0.012	68'640
Material costs	3'964'682	13135	0.131	651'210	2504	0.083	324'430
Labour costs	611'664	2025	0.020	78'968	304	0.009	35'136
Building costs	167'909	556	0.006	21'684	83	0.003	9'758
Depreciation	1'160'067	3841	0.0038	149'830	576	0.009	67'414
Interest on capital	526'022	1742	0.017	67'930	261	0.009	30'568
Other general costs	174'773	579	0.006	22'570	87	0.003	10'157
Total fixed costs	2'640'267	8743	0.087	340'962	1311	0.044	157'433
TOTAL	6'668'949	21877	0.219	992'071	3866	0.127	477'843

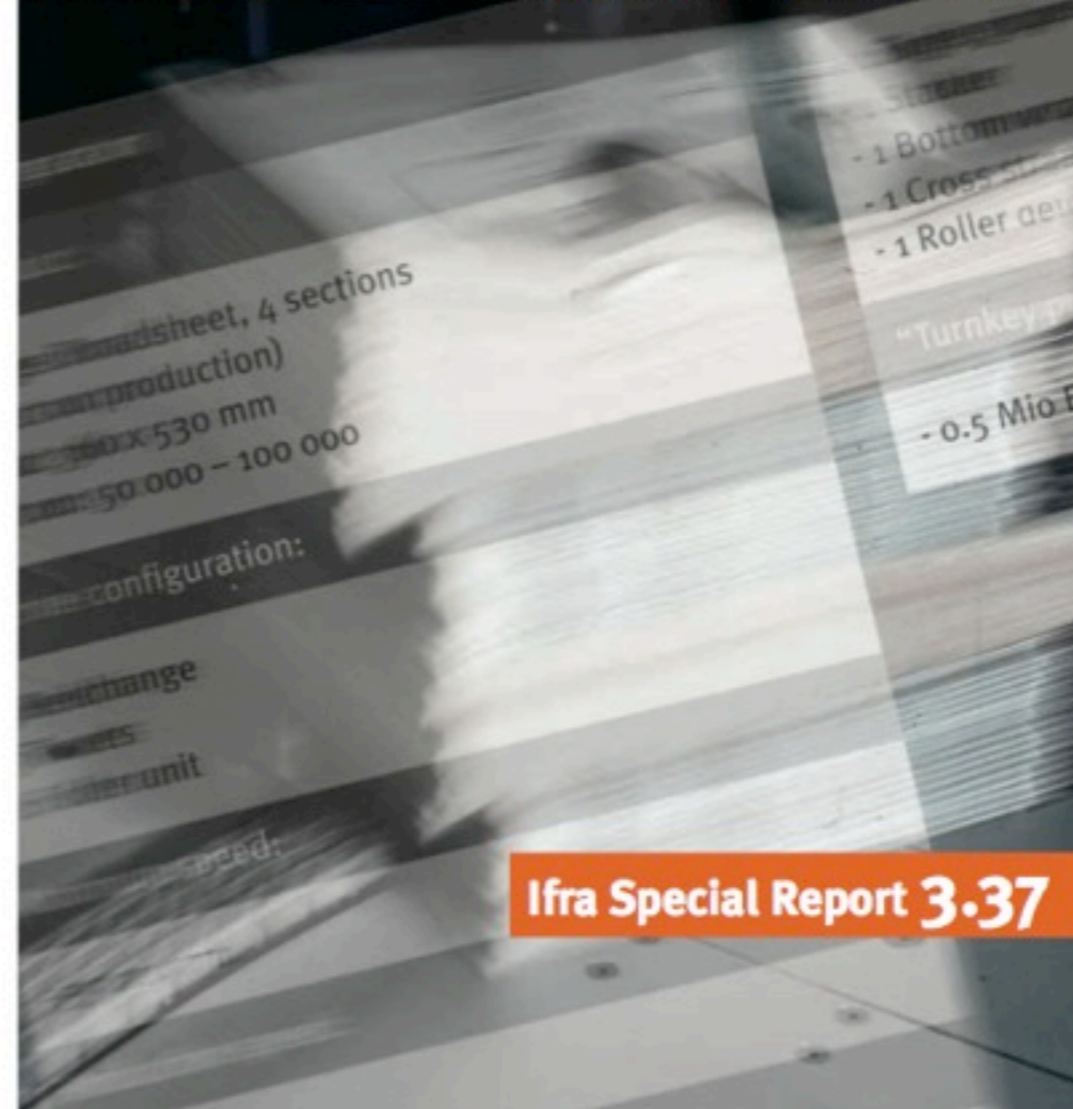
Table 15

Middle wage countries

	Daily: costs shared with other titles	Daily: 100% fixed costs	Finance: full costs	Finance: marginal costs	Local: full costs
Variable costs	0.131	0.131	0.083	0.084	0.069
Labour costs	0.020	0.020	0.009	0.010	0.008
Fixed costs	0.067	0.080	0.034	0.00	0.025
Total costs	0.219	0.231	0.127	0.094	0.102

Table 16

Newspaper cost calculation model



Ifra Special Report 3.37

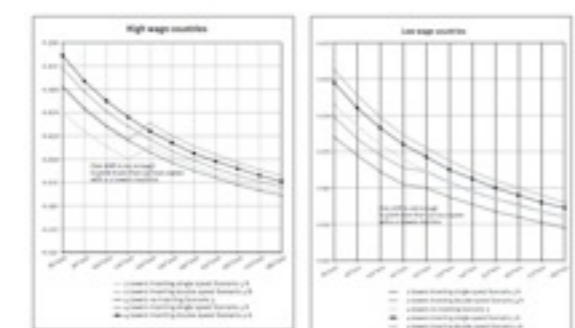


Figure 7

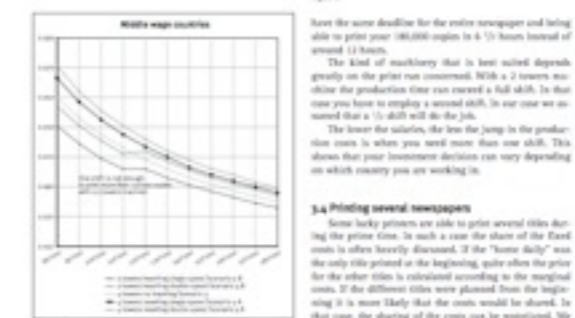
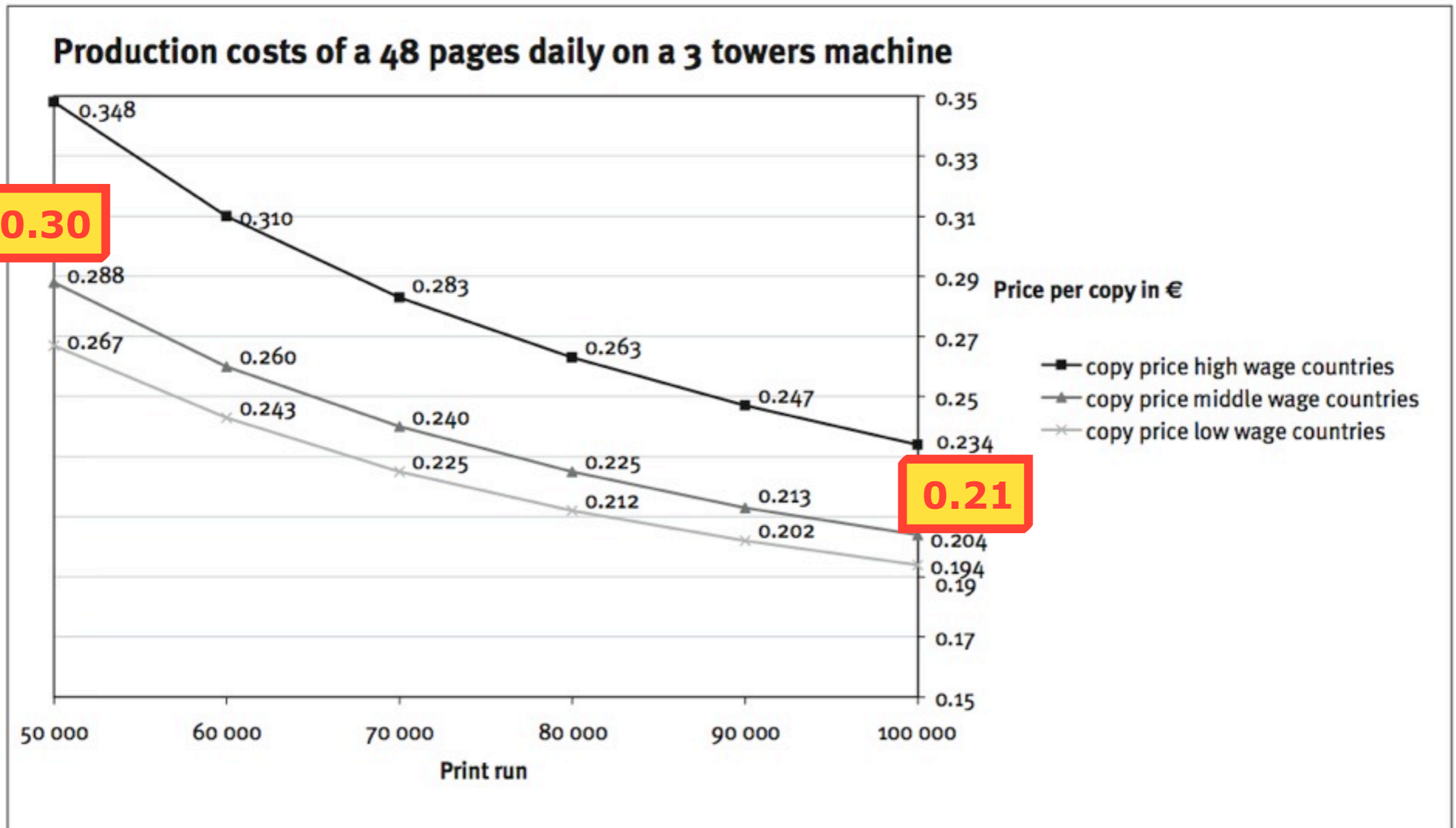


Figure 8

Some lucky printers are able to print several titles during the prime time. In such a case the share of the fixed costs is often heavily discussed. If the "home daily" was the only title printed at the beginning, quite often the price for the other titles is calculated according to the marginal costs. It is more likely that the costs would be shared. In that case, the sharing of the costs can be negotiated. We assumed that the costs would be split according to the number of pages printed (number of copies a number of issues a number of pages).

Table 16 shows the characteristics of the 3 titles. For the costs calculation we used the scenario 5 with 4 issues. Table 15 shows the results for middle wage countries.

Conventional newspaper printing



Printing speed

- High speed in conventional newspaper printing
 - Up to 100 000 copies per hour (tabloid)
 - Web speed up to 15 m/sec
- Digital printing
 - Web speed up to 2,5 m/sec
 - How many copies per hour?
 - How many digital presses would you run in parallel?

Business model of digital newspaper printing

- Who will print the newspapers digitally?
 - Will each publisher run many distributed print houses across the country?
 - Will printing be out-sourced to many small printers?
 - Will printing be done by the newspaper distribution companies?

Business model of digital newspaper printing

- How to make profit with digital newspaper printing?
 - Will the printer need to run additional day-shifts to break even?
 - What kind of commercial jobs to print during the day?
 - What are the competitors of digital commercial printing?

Digital newspaper workflow today

- Merging of prepress and press production
- Extension of the digital workflow into the press
- Closed-loop process control
- Inline colour control (press)
- Closing the colour management loop
- Total production control systems

Newspaper workflow issues today

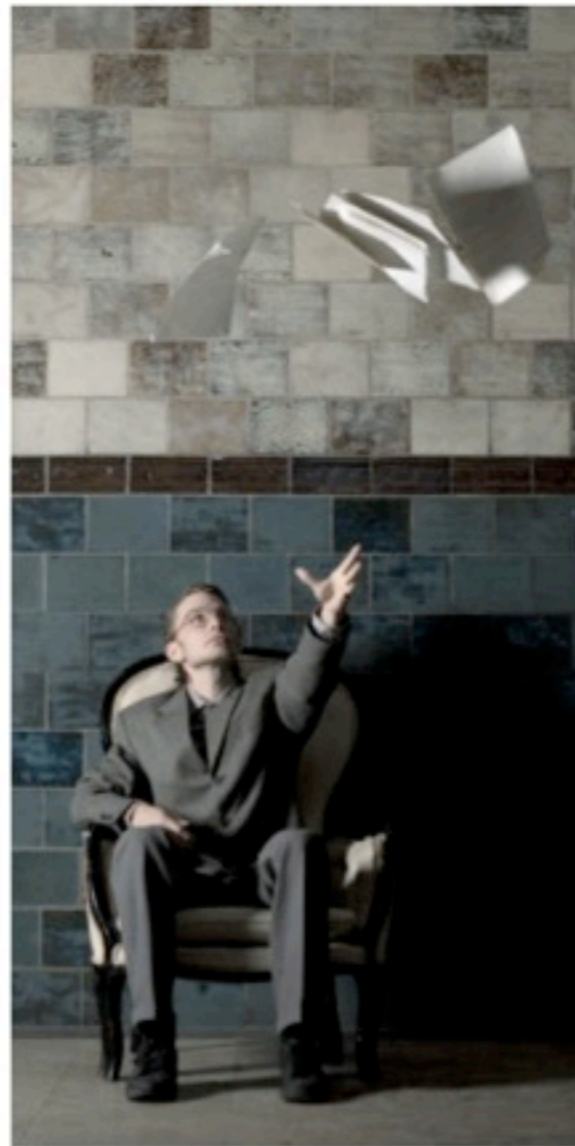
- Job change over
 - Plate making is not the bottle neck any more
 - The job change over is the bottle neck
 - Conventional newspaper presses are optimised for large circulations, not for many job changes
- Current solutions
 - Process-free or chemistry-free plates
 - Automatic plate change systems, including transport

Hyper local

- Citizen journalism
- The printed blog
- Niche publications

PRINTCASTING

New project boosts niche publishing prospects



How would you like a means of exploring ultra local news and (very) niche publishing markets without having to invest significant time, resources, or money? What if you could then automate that process so that generating copy, aggregating content, publishing, and distribution all simply took care of themselves? If advertisers could be left to place their own ads and the content providers got an equitable share of the profits? All automatically. And what if the end result was either online or hard copy just as the target market wants? That's the premise of Printcasting, a technology aimed at bridging the online/offline divide, exploring new publishing sectors, and turning an honest buck in the process.

Printcasting is a means of producing short run, niche newsletters by combining the wealth of user-generated content with existing online tools. The content is user generated but used by permission, the production is fully automated, and the distribution can either be online or printed with a frequency and print run chosen by the newspaper. The real beauty of it is that it creates a bridge between online and offline content, allowing local newspapers to explore ever more micro markets with very little outlay. Plus it comes complete with an advertising/profit sharing model that promises to keep everybody involved happy.

How does it do that?

It does that by combining the wealth of UG content (and particularly blogs) with the regular automated delivery of RSS so that the content is automatically delivered to a template alongside images, layouts, adverts, and text from the newspaper itself. These templates are

TKS Jet Leader



“Jet Leader”, Tokyo Kikai Seisakusho (TKS)

- Introduced at JANPS, November 2009
- Inkjet drop-on-demand web press
- Kyocera piezo-electric print heads (Kyoto Ceramics)
- Web width up to 546 mm
- Max. speed 150 m/minute (2,5 m/sec)
- 15 000 copies of A4-pages/hour
- Resolution 600 x 600 dpi
- Paper grammages of 45 to 108 g/m²

“Jet Leader”

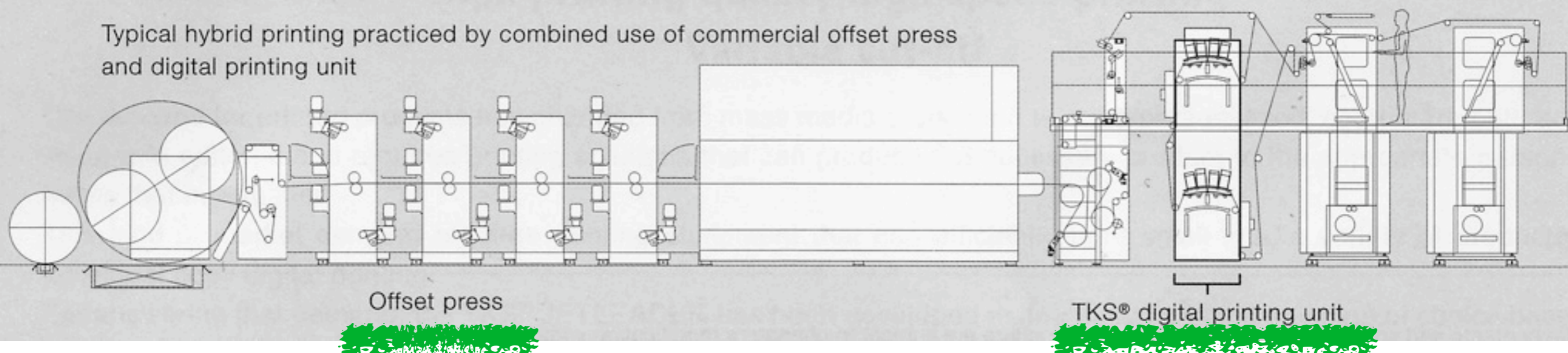
- Reel diameter 1 270 mm
- No start-up waste, but white waste due to web-lead
- Water-based pigment ink (e.g. Sachet Inx)
- No “click charge”, ink costs of about 8 €/kg
- Infeed-unit controls web tension and anti-static illumination
- Optional dryer allows SC and coated paper

“Jet Leader”

- Print image monitor detects print problems and assures quality of printed Kanji characters
- Post-processing options
 - Newspaper broadsheet and tabloid folding
 - Magazine and digest folding
 - Variable sheet cutting
- Targets market: print runs up to 10 000 copies

Hybrid printing of offset and ink-jet

Typical hybrid printing practiced by combined use of commercial offset press and digital printing unit



Processing direction

Digital newspaper printing

- What are the costs?
- What is the productivity?
- What will be the future business model?

Kodak Versamark



Océ JetStream



Panel

- Monika Olbricht
Océ Marketing & Corporate Communication Director
- Riccardo Passerini
Kodak Category Manager Digital Printing
Commercial and Consumer Solutions



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