

Digital Printing for Newspapers: An Outlook

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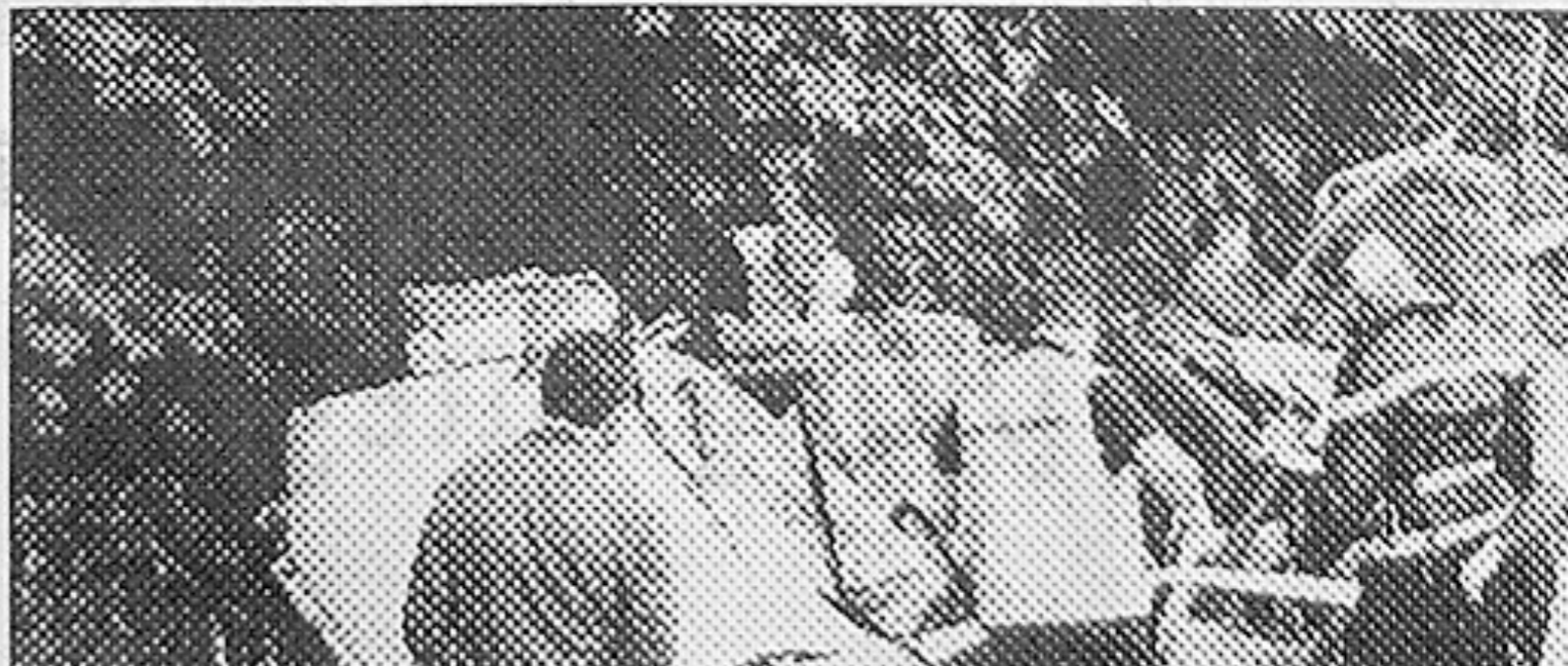
Digital newspaper printing

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

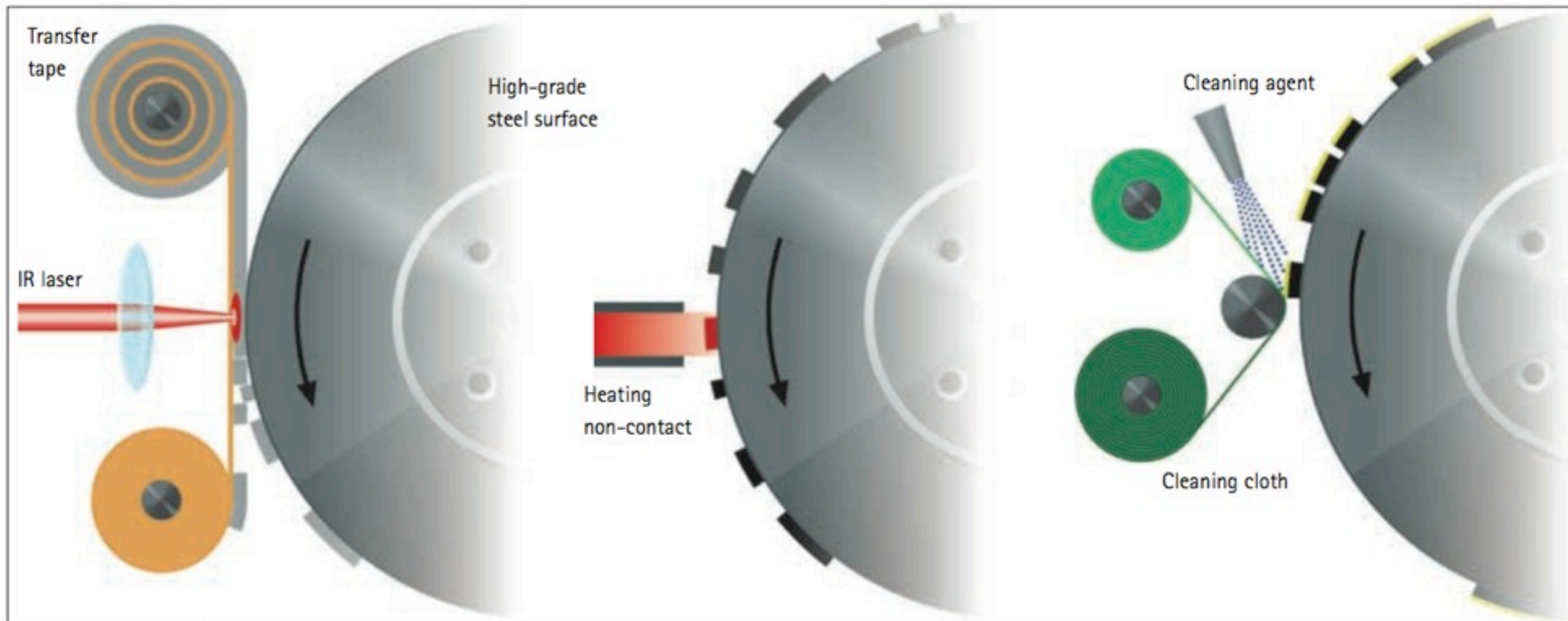
Digital imprinting, drupa 1995

Un automobiliste n écrasé dans sa voit

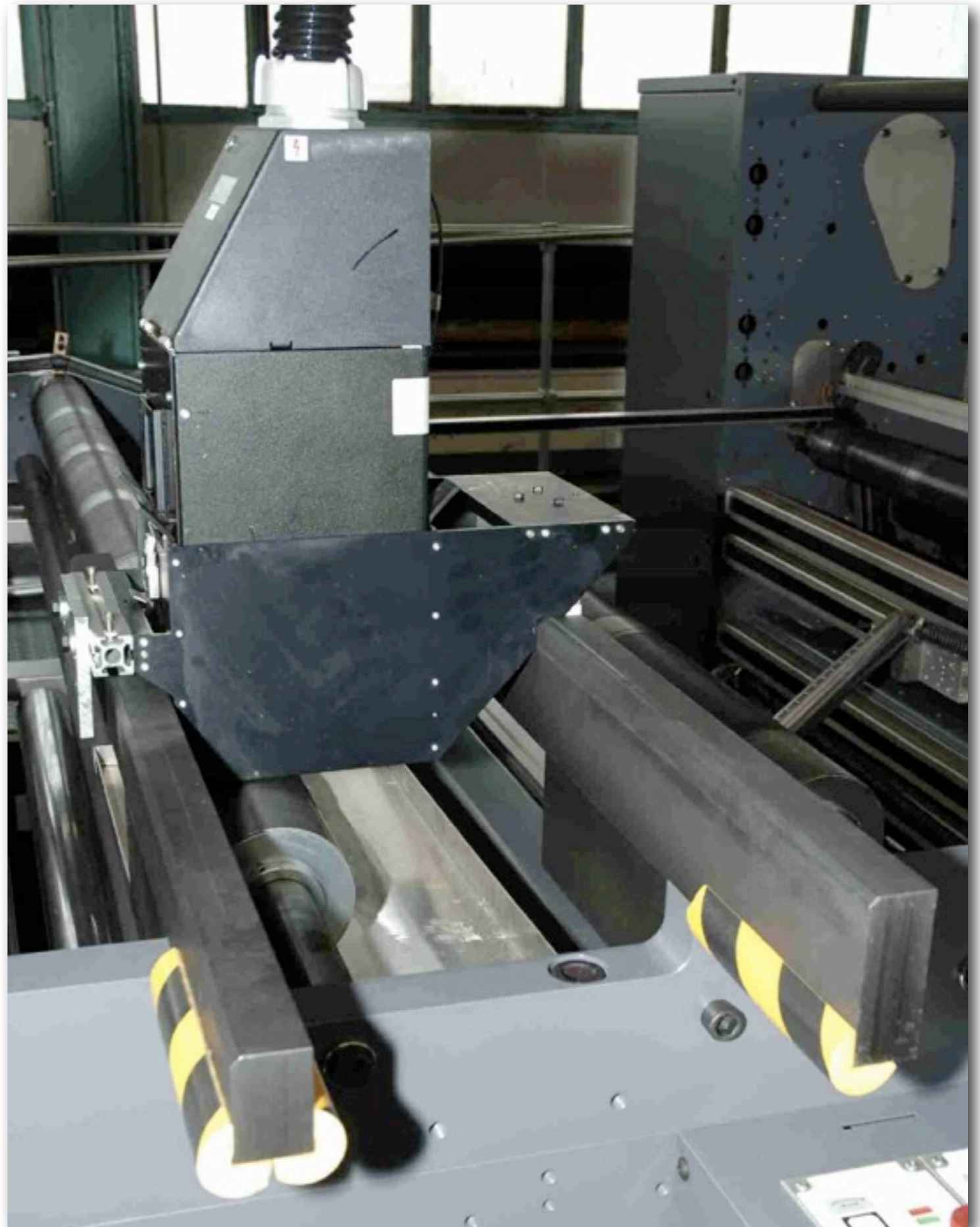
*Le chargement de bois d'un semi-remorque a écrasé une voiture, à la hauteur du pont HBL s
Jeanne-d'Arc et Freyming-Merlebach. Le conducteur, Frédéric Dupuis, de Freyming-Merleb
enceinte de sept mois, a été hospitalisée en état de choc.*



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. Plates are washed from a real cassette and the printed form may 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, K50 14 Kuro, Screen Enigma, Ryobi 50 and Komori-Akiba K5 C-65. 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 "genius" computer-to-cylinder offset press is the 9000web 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 abandoned. The individual partial processes are shown in Figure 8: 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 offset 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 8: The T33 technology, used in the 9000web, the name of the first platform computer-to-cylinder press on the market.

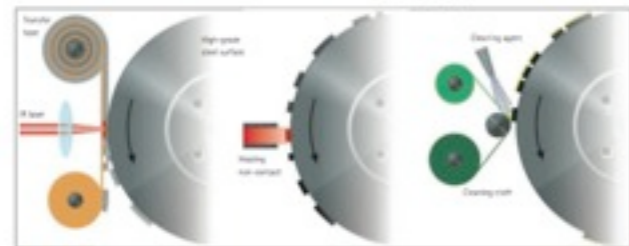


Figure 8: The T33 technology, used in the 9000web, the name of the first platform computer-to-cylinder press on the market.



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!

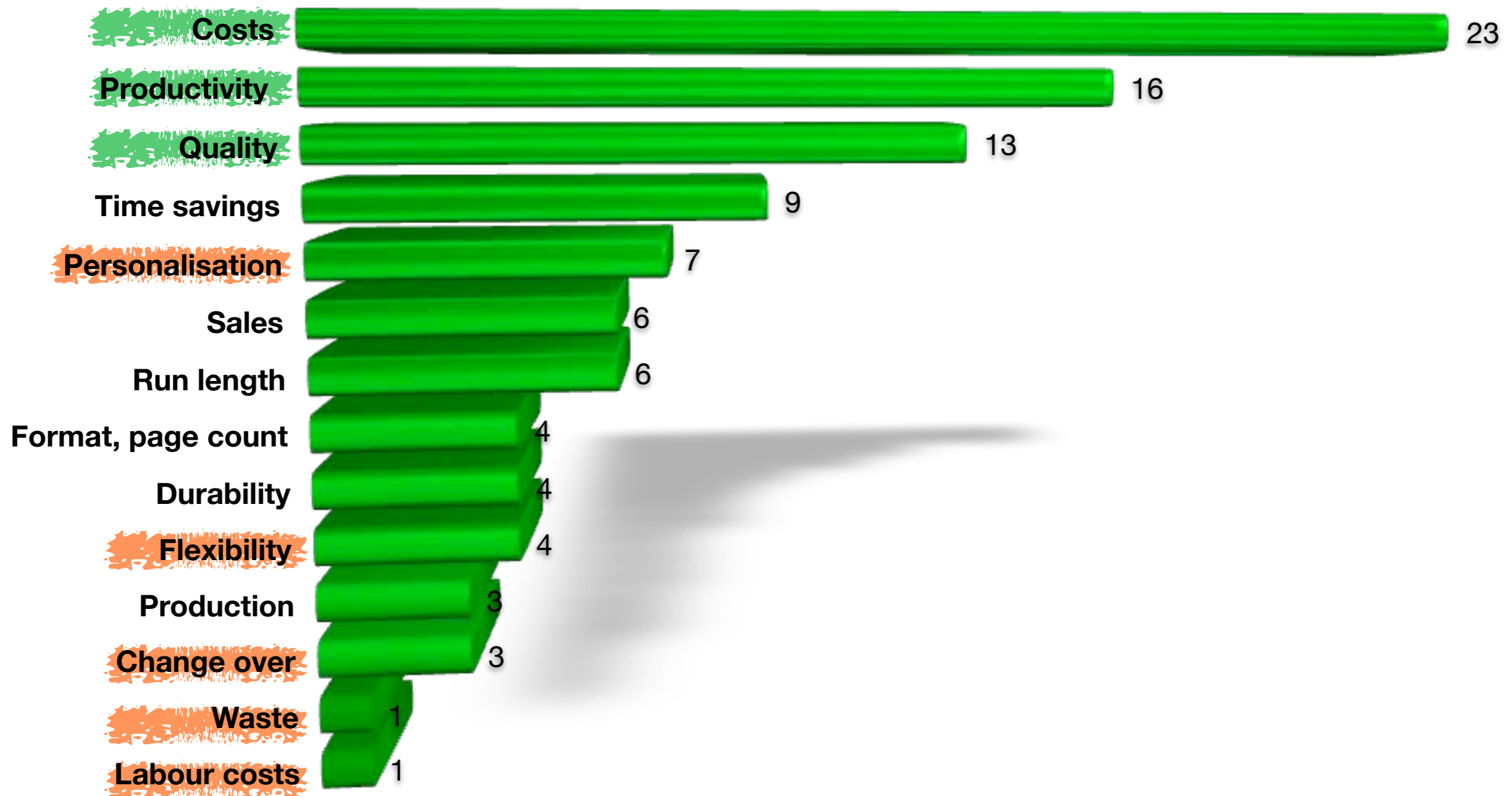
- Remotely printed newspaper titles? Yes!
 - Press Point, Newspaper Direct
 - Océ Digital Newspaper Network since 2001
 - Digital printing at large events – Olympics

What became reality so far?

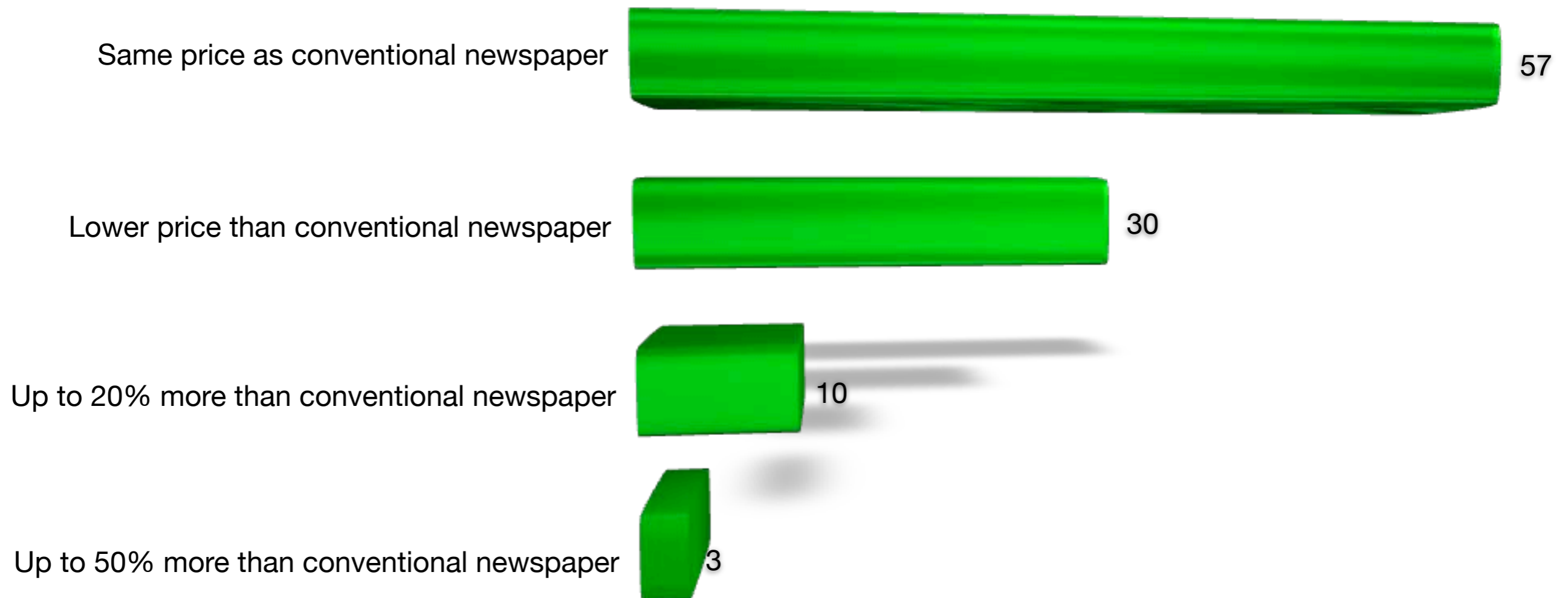
- Digitally printed personalised local editions? No!
 - Versamark at IFRA Expo Barcelona in 2001
 - Océ presentation at drupa 2004

- 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 %

Digital printing today

- Inkjet on newsprint ✓
- Print quality ✓
- Colour quality ✓
- Costs?
- Speed?

"All the News That's Fit to Print"

The New York Times

National Edition
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WEDNESDAY, AUGUST 17, 2008

ECONOMY SHOWS SIGNS OF STRAIN FROM OIL PRICES

INFLATION SURGED IN JULY

Companies and Families Are Seeking New Ways to Trim Their Costs

By JAD MUKAWAD and DAVID BERNHARDT

Inflation surged last month, the government reported yesterday, as the long rise in energy prices finally seemed to be jolting the American economy. After absorbing the burden of oil at \$80 a barrel, there at \$90 and beyond, consumers have started to react as prices have risen above \$90 in recent weeks.

With many blamed high oil prices yesterday as it reported that in the second quarter its profits rose at their slowest rate in four years. The chief executive, R. Lee Scott Jr., said investors that expensive oil was weighing him because it seemed to be straining recent income gains for many customers.

Actives have already felt the sting of increasing jet fuel costs. Last week, Delta, United and Continental raised domestic fares in their latest attempt to stem losses. Delta is struggling to avoid bankruptcy. U.S. Treasury reminded its drivers not to leave their truck engines running when they deliver packages.

Nearly all of the jump in inflation last month came from energy. Over all prices rose 0.8 percent in July — and 3.3 percent over the last year — after having been flat in June.

Across the country, families are trying to figure out where to cut costs as they can afford gas that now averages \$2.32 a gallon nationwide after peaking the highest weekly jump in at least 13 years, according to the latest government statistics. "We missed much less," said Stella Tuttle, a 50-year-old teacher's assistant in Brooklyn. Instead, of going to the movies, watching plays or dining out, she now takes walks in the park with her husband and son and checks the newspaper to see when a nearby Barnes & Noble will be holding a sale.

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48 ARE ARRESTED AS ISRAELIS CLASH IN GAZA PULLOUT

PROTESTS ARE EMOTIONAL

Half Have Left — Troops Set to Use Force Today if Settlers Resist

By STEVEN BRILLINGER and DEENA BRAYT

NEVE DEKALIM, Gaza, Aug. 16 — Israeli soldiers and commentators threw stones and eggs at soldiers and police officers here Tuesday as an emotional war of attrition continued over the government's order to vacate the site and other Jewish settlements in the Gaza Strip, which began captured 20 years ago.

At least 48 demonstrators were arrested in the clashes as officers poured into Neve Dekalim and tried to ensure that nothing was said in honor for residents who wanted to leave.

The war started a fortnight of what was expected Wednesday when the Israeli army started to move forcefully into many settlements in order to complete the pull-out of civilians within a week.

The senior Israeli Army commander in Gaza, Maj. Gen. Dan Halutz, said his troops would be concentrated here, in the largest settlement in Gaza, which has been the focus of resistance to the decision to pull out of all 22 settlements in Gaza and 4 settlements in the West Bank.

Since Monday it has been illegal for Israeli civilians to be here, and Tuesday was the last day when soldiers could leave on their own, with their belongings.

Officials say half of Gaza's 6,000 soldiers have already left, and General Halutz promised that those who agreed to leave by midnight would be permitted to return to pack their belongings. Those who wait and are taken by force will receive less government compensation for the move than those who stay the law, officials said.

Neve Dekalim has become a focus for the religious and nationalist elements in the political arena, which Prime Minister Ariel Sharon says is necessary for Israel's future security.

A high-ranking police officer said the intention was to pressure the soldiers with overwhelming force, even if the officers are ordered, in order to make serious resistance seem impossible. In preparation, many of the demonstrators here have taken refuge in the synagogue.

Many of the smaller settlements, especially in the north, are almost empty or nearly so.

Tuesday morning, the army had detained nearly 1,000 Israelis who tried to enter the closed military zone of Gaza and, while the soldiers and protesters slept, soldiers cut down the gates to the settlement. The police tried to enforce the law, the protesters, many of them

Continued on Page A3

3 Set to Hang As Executions Return to Iraq

By JAMES GLANT and SABERINA TAVERNESE

BAGHDAD, Iraq, Aug. 16 — Three men convicted of dozens of rapes, kidnappings and killings in the southern city of Kut, in one case displaying the episode of an Iraqi soldier to obtain payment for his murder, will be put to death by hanging in the first execution by Iraq's civilian courts since the fall of Saddam Hussein, Prime Minister Nouri al-Maliki said Tuesday.

The case against the men, who acted in concert, is one of 16 in which death sentences have been handed down since the death penalty was reinstated in Iraq in August 2006. It is the first case to emerge from a mandatory review by an appeals court and be sent to Mr. Maliki and a three-member council headed by President Jalal Talabani. The council must approve the execution before it can take place.

The combination of a shaky government eager to show that it is taking steps against terrorism and overwhelming public support for the death penalty here could make the Kut case the first of many executions in Iraq. The list could include Mr. Hussein's. He is expected to go on trial within the next two months before a special tribunal for crimes against humanity.

"We know that public opinion is eagerly waiting for this," said Ghaleb

Continued on Page A12

A New Police Force Emerges From Mosul's Chaos

By RICHARD A. O'PPEL JR.

MOSUL, Iraq, Aug. 11 — The First West police station, erected over four days in July on a gravel-covered hill in the most violent part of this violent city, is little more than concrete walls, concrete barriers, gun towers and portable toilets. Police officers mill about, some in street clothes or gun shirts, wearing through Glock pistols and machine-gun belts.

It may not look like much, but guarding the police so deep inside the insurgency's home turf would have been inconceivable a few months ago, say American officers, who credit the police with gathering intelligence leading to the capture of insurgent suspects even as attacks against the police have soared.

With the Bush administration and military leaders eventually planning to draw down troops, the training of

Iraqi security forces is a critical element of American strategy. Most attention has focused on the military, but the police will be at least as important. And nowhere did the police feel quite so spectacularly as in Mosul in November, when a 1,000-man force descended in the face of an insurgent uprising, sending Iraq's second largest city into chaos.

Under heavy protection of United States troops, the Mosul police are rebuilding. Compared with some nearby hot spots — like Anbar Province and Tal Afar — they are farther along. But the effort to reconstruct the police has encountered huge sectarian, cultural and even tribal obstacles, and now necessitates a central command for American planners. Have the police force's improvements been contingent on, careful and continued hand-holding by large numbers of American soldiers, and will they evaporate when American

forces begin pulling out?

Many soldiers believe the police could emerge as large numbers of American troops stay for years.

"Without that security shield, the Iraq police will be scared, and a scared Iraq is a useless Iraq," said First Lt. Keith Ukey of the First Battalion of the 10th Infantry Regiment, which patrolled western Mosul.

The executive officer of one company in the battalion, First Lt. Dan Keane, said Mosul could experience gang-style civil war no matter what happens here. "While we're here, it's like they have Big Brother looking over them," he said, referring to the police.

Only a few Iraq officers also have an early police.

"The Mosul police are still in the process of being built up again," said the Mosul police chief, Maj. Gen. Ahmad Mohammed Khalid al-Jabouri, who says

Continued on Page A13

Feeling the Pinch

Consumer prices are rising faster due to the rise in the price of oil.

U.S. CONSUMER PRICES

INDEX, EXCLUDING ENERGY

Year-over-year change

Source: Bureau of Labor Statistics, The New York Times

Continued on Page A12

INSIDE

160 Die in Plane Crash in Venezuela

A Colombian airliner carrying French vacationers home from Panama to Maricao crashed in northern Venezuela, killing 160 people aboard. Engine problems are believed to have caused the crash. **PAGE A4**

1996 Warning on bin Laden

State Department analysts warned in July 1996 that Osama bin Laden's move to Afghanistan would provide a more dangerous haven as he sought to expand radical Islam "well beyond the Middle East," but the Clinton administration chose not to heed the warning. **PAGE A4**

Walls Need Not Apply

In a shift from his earlier position, administration officials like Dave and Mike are favoring every-day workers rather than immigrants, with reports citing the impact of rising suburban and the aging of the baby-boom population. **BUSINESS PAGE 1**

Baschoff's Talent Big Bang

The recent 13-day suspension of Rafael Palmeiro by the league for failing to test for steroids will not only shake up all of Palmeiro's secondary role as a reliever on the Yankees, but it will also be the beginning of a new era for the Yankees' bullpen. **SPORTS PAGE 14**

INSIDE

College Skills Found Lacking

Only about half of this year's high school graduates have the reading skills they need to succeed in college, a study has concluded. **PAGE A14**

Questions on London Killing

An inquiry was expected to report a verdict on the killing of a British man after the bombing attempt on July 21. **PAGE A4**

Labator's Little Cousin

Laborious, who, post, the-shed European relatives of his, are afraid that they have only one, not a cousin, but that of their cousin from Maine. **PAGE 11**

INSIDE

Meese's Influence Looms in Today's Judicial Wars

By LYNETTE CLEMENTSON

WASHINGTON, Aug. 16 — It was July 2003 and the newly confirmed attorney general, Edwin Meese III, was preparing to address the American Bar Association. Trouble was, he was conflicted about what to say.

A 11-day hostage crisis involving a hijacked American airplane had just ended, and Mr. Meese had eluded to discuss terrorism. But the Supreme Court had just delivered a series of decisions that bolstered conservative and rejected President Bush's executive order to detain the 15th-century prisoner.

In the end, Mr. Meese gave what many say was the speech of his career. Backing the foundation for the judicial wars that continue today, Meese, inspired a generation of conservatives — including, some say, a young lawyer named John G. Roberts Jr., the Supreme Court nominee.

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Citing Violence, 2 Border States Declare a Crisis

By RALPH WILSON

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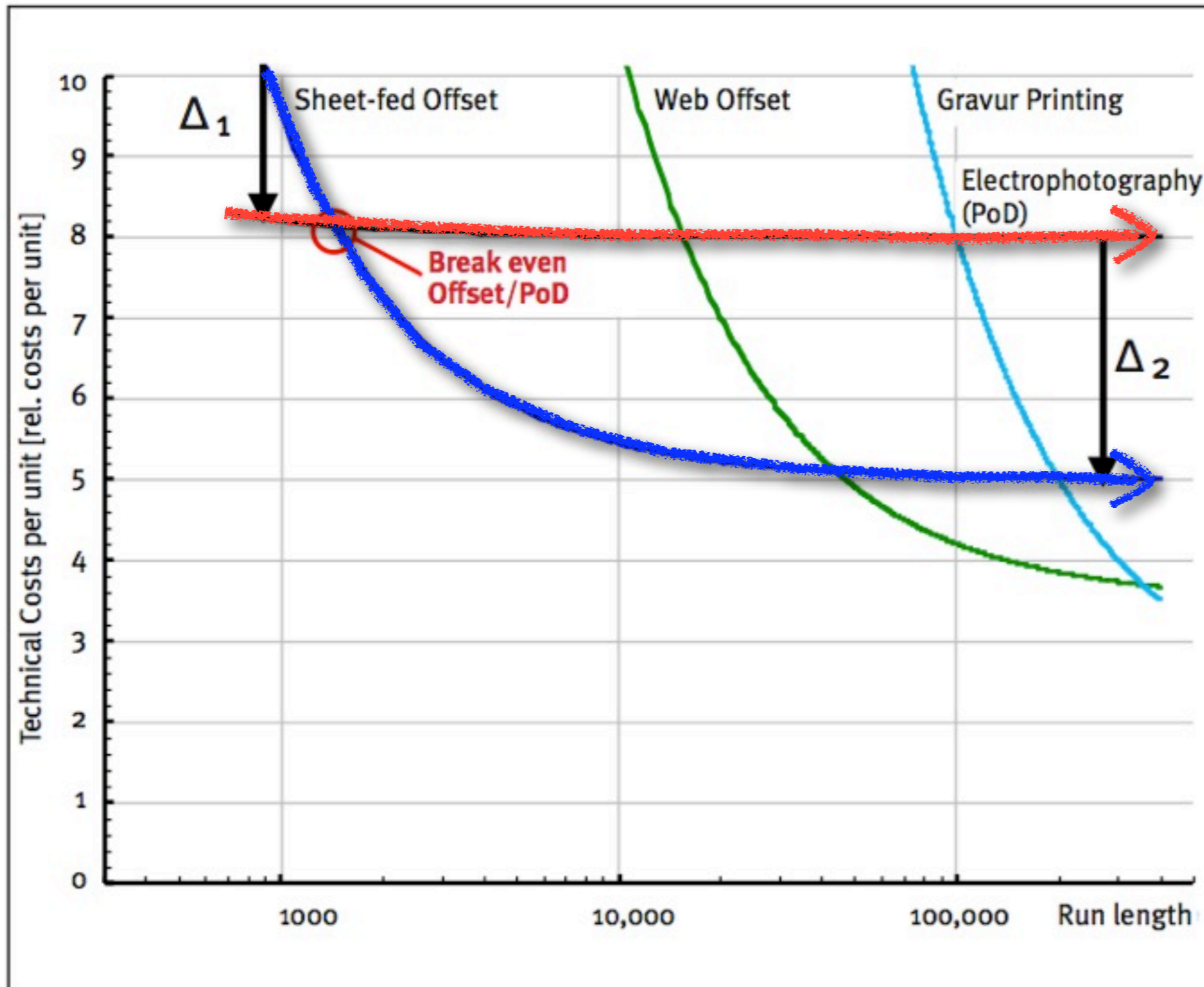
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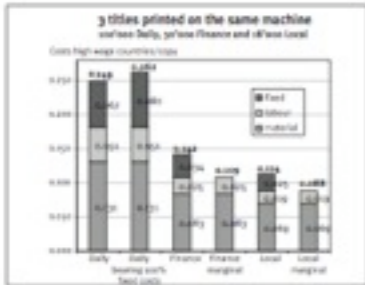
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Cost per copy

- 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	1004	0.010	36'531	141	0.005	17'513
Plates costs	212'608	704	0.007	91'520	352	0.012	68'640
Material costs	3'966'682	13135	0.131	651'210	2504	0.083	304'430
Labour costs	611'664	2025	0.020	78'968	304	1.090	35'136
Building costs	167'909	556	0.006	21'684	83	0.003	9'758
Depreciation	1'160'067	3841	0.0038	149'890	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

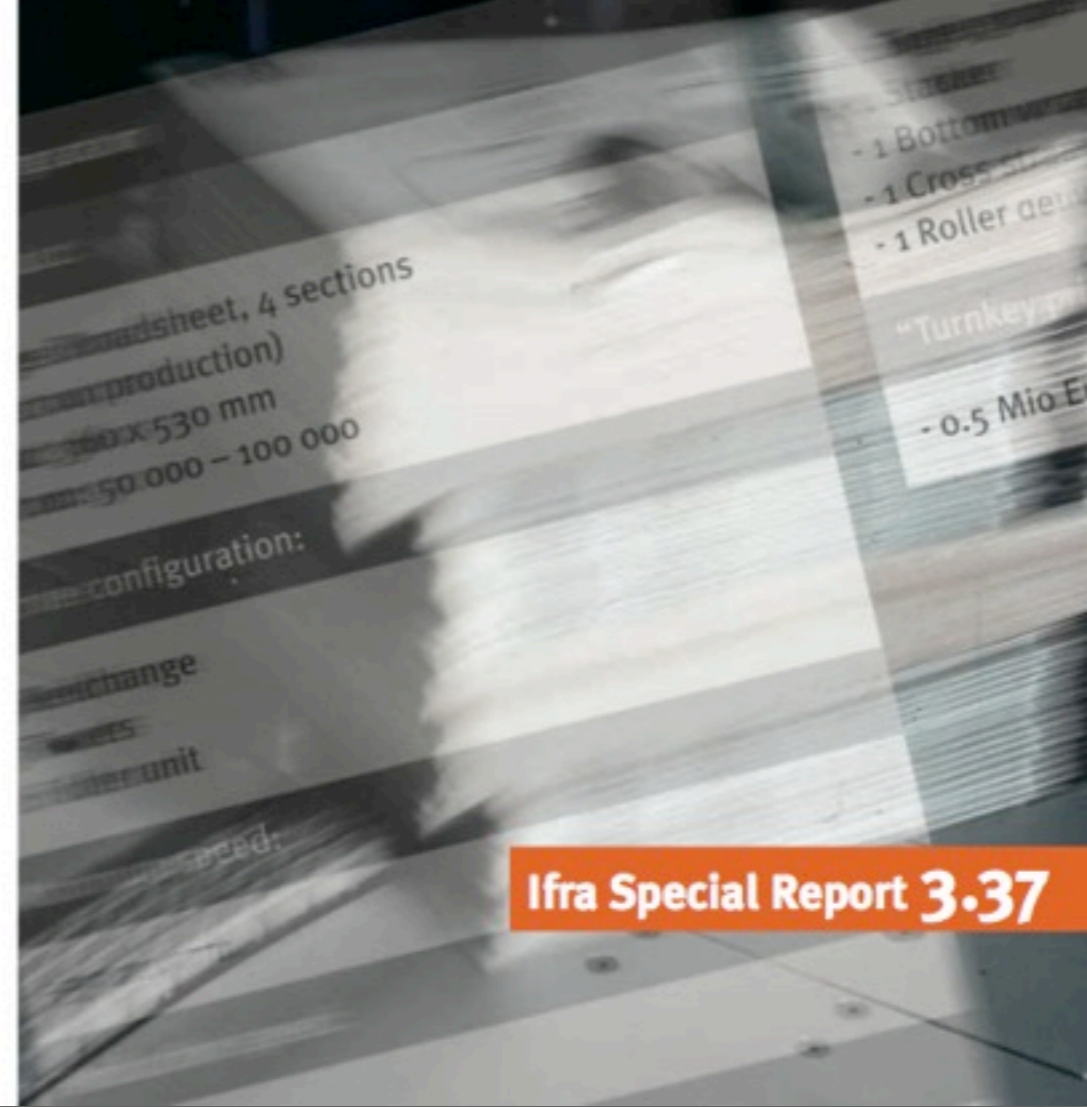
Table 15

Middle wage countries

	Daily: costs shared with other titles	Daily: 50% 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	0.020	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

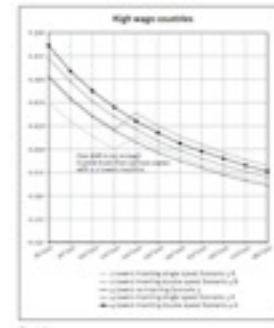


Figure 7

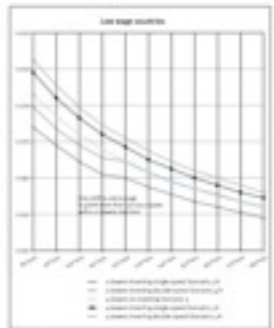


Figure 8

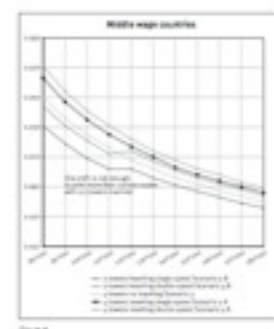


Figure 9

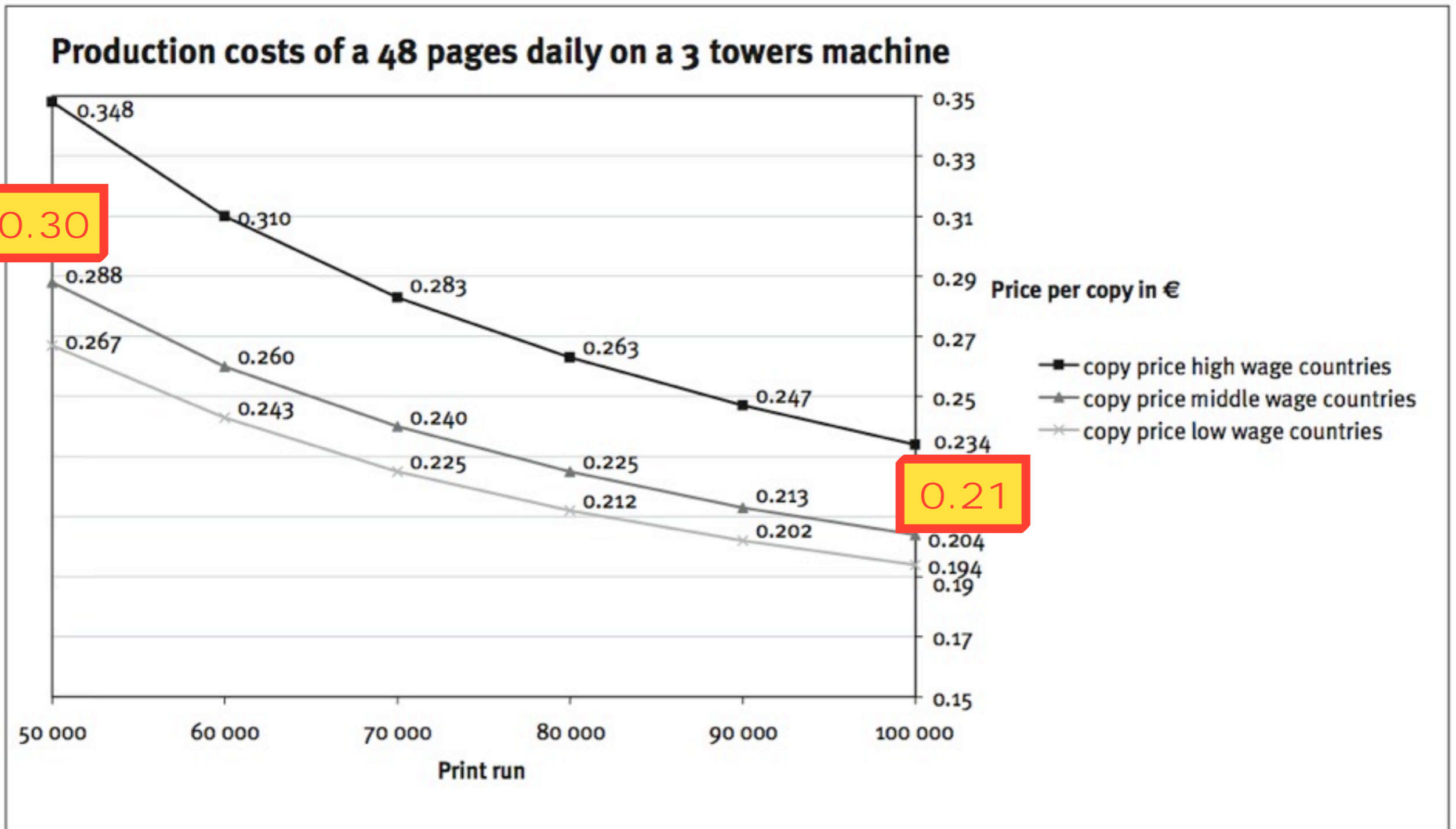
have the same deadline for the entire newspaper and being able to print over 100,000 copies in 4 1/2 hours instead of around 12 hours.
The kind of machinery that is best suited depends greatly on the price per copy. With a 3 colour machine the production time can exceed a full shift. In that case you have to employ a second shift. In our case we assumed that a 1/2 shift will do the job.
The lower the salaries, the less the jump in the production costs is when you need more than one shift. This shows that your investment decisions can vary depending on which country you are working in.

3.4 Printing several newspapers

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. If the different titles were planned from the beginning 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

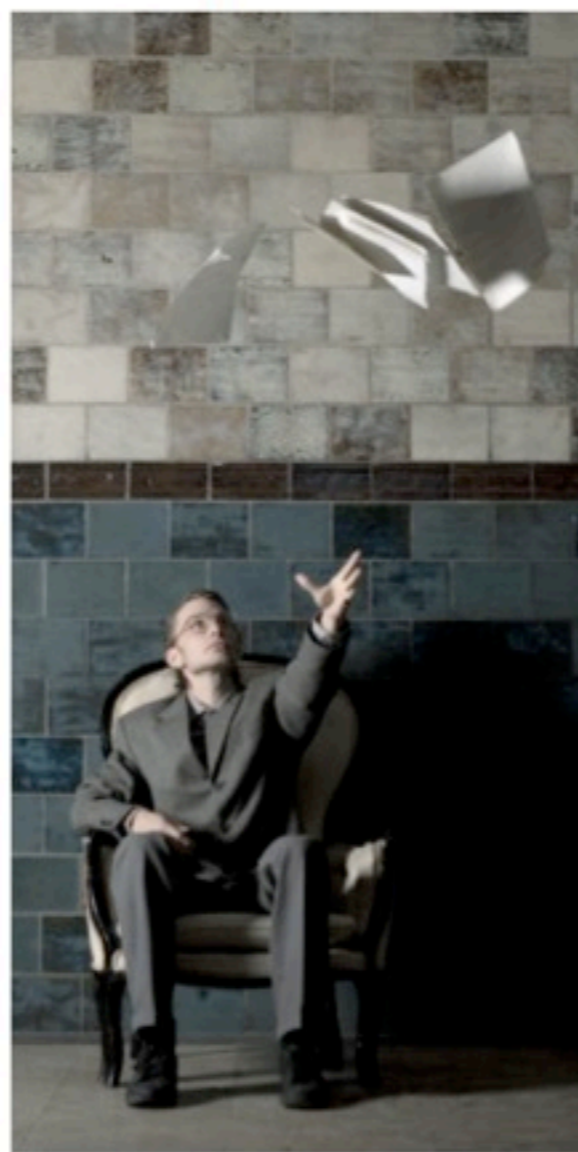
- Job change over
 - Plate making is not the bottle neck any more
 - The job change over is the bottle neck
 - Conventional newspaper presses are optimised for large circulations, not for many job changes
- Current solutions
 - Process-free or chemistry-free plates
 - Automatic plate change systems,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

Hyper local

- Citizen journalism
- The printed blog
- Niche publications

PRINTCASTING

New project boosts niche publishing prospects



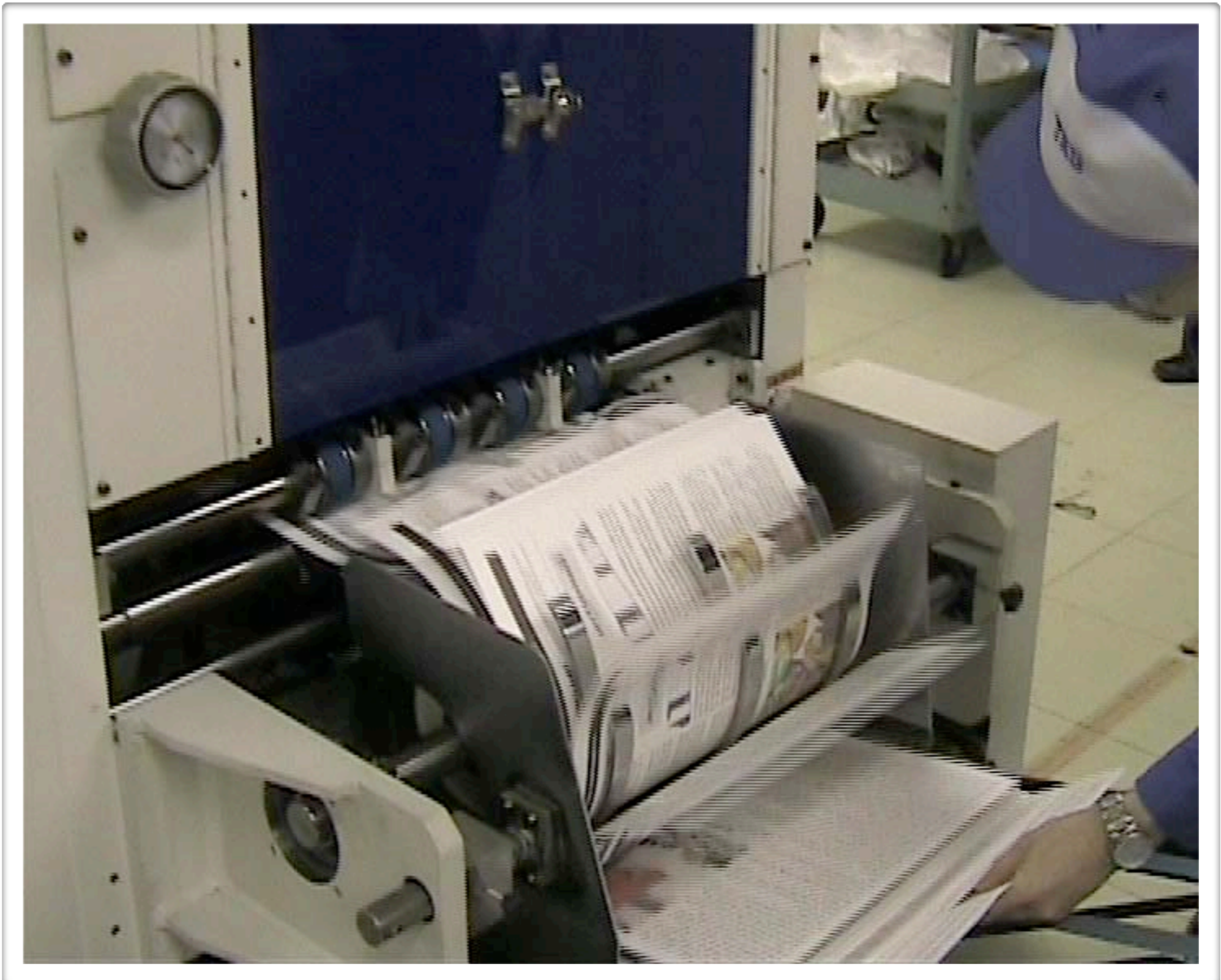
How would you like a means of exploring ultra local news and (very) niche publishing markets without having to invest significant time, resources, or money? What if you could then automate that process so that generating copy, aggregating content, publishing, and distribution all simply took care of 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”

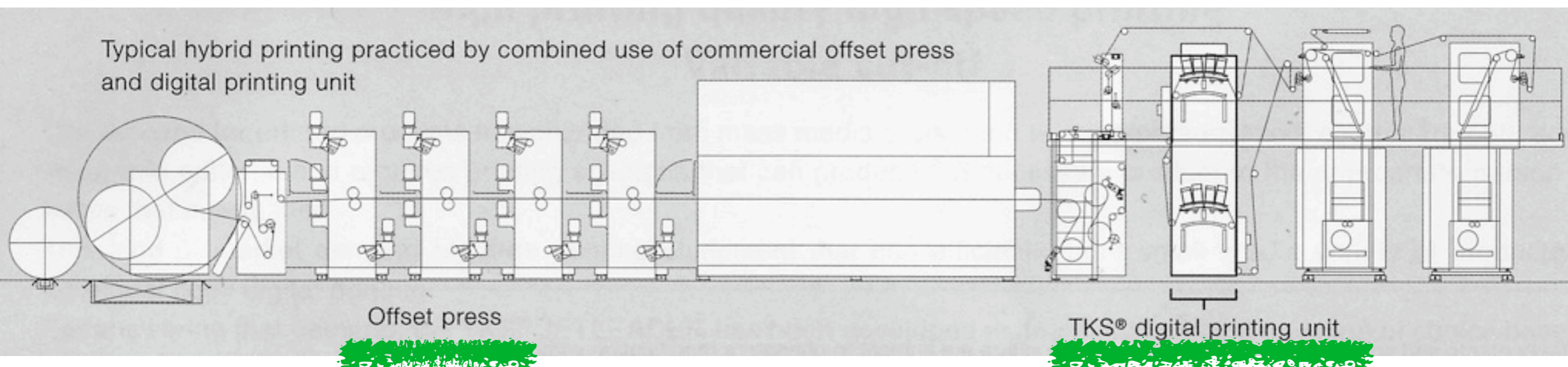
- Reel diameter 1 270 mm
- No start-up waste, but white waste due to web-lead
- Water-based pigment ink (e.g. Sachet Inx)
- No “click charge”, ink costs of about 8 €/kg
- Infeed-unit controls web tension and anti-static illumination
- Optional dryer allows SC and coated paper

“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
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