A New Concept for Managing and Distributing Real Time Content in Newspaper Products

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Keywords: Personalized news, real-time content, News System

Abstract: Despite the newspaper companies´ strength in selecting and presenting information in a survey able manner, its editorial, manufacturing and distribution processes are rigid and connected to high costs. On the other hand, this is an effect of the newspaper specification, which is aimed to serve a large heterogeneous reader group. However, such a specification does not correspond to future demands for personalized news and effective resource utilization.

In this paper we introduce a new concept for managing and distributing real-time content in a newspaper product. It will automatically generate individualized products with possible real time updates of content and advertisements. This is feasible since the content modules (text, images, illustration) and advertisements are designed-to-fit directly into the templates, which eliminates time for editing and are then printed directly with digital presses. In addition, the distribution cost is substantially reduced, since the manufacturing is geographically located within an event, e.g. festival or conference. We argue that this system combines the benefits of traditional newspapers and the current demand for real-time news and resource utilization.

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1. Introduction

1.1 Background

In the past the traditional newspaper contained the same information and advertisements in the entire circulation. Nowadays, a lot of newspaper companies macro zone or micro zone their newspapers, which means that the content and advertisements can be varied depending on the geographic distribution area, e.g. two or more edition or edition versions are produced [Falke, 2000], [Fällström, 1998]. However, the zoning is not applied on a personalized level, which depends on the production flow and the production and distribution organization [Fuchs, 1995]. Since, the sale of advertisements can vary between different editions, manual work will be needed for filling in empty areas with either editorial material or advertisements [Falke, 2000].

By using print-on-demand an electronic file will be distributed to a printing unit. The number of different electronic documents will determine the number of different editions that the readers will be offered. For practical reasons most newspaper companies usually choose to distribute one document each day or an updated version a few times a day.

1.2 Method

In this study semi-structured interviews were conducted with system developers as well as digital printing unit developers.

Literature studies were conducted which covered document systems as well as editorial workflows.

2. Three Available Print-on-Demand Solutions

Today, the editorial process demands manual work, which makes the production of more than one edition time demanding. Digital printing units makes it possible to print individualized newspapers, which makes it possible for newspaper companies to offer that to the readers and advertisers. However, in order to decrease the time to produce individualized newspapers the editorial production must be re-organized.

	PEPC	Newspaper Direct	NewsBox
Media Format	A3, B/W, Duplex	A3,	A4, B/W, Duplex
Updated	Daily	Daily	4 times per hour
Number of pages	40	-	12
Printing Equipment	PEPC's print-on-demand vending unit	High-speed HP 8100 printer	Kyocera
File format for content distribution	PDF via Satellite	PDF Document via Internet or e-mail	PDF document via Internet

Table 1: Three different print-on-demand technologies.

Today, there are a number of different companies that offer newspaper companies print-on-demand solutions, which have a slightly different approach for solving the content distribution and printing. In figure 1 three print-on-demand solutions from three different companies are compared.

Newspaper Direct receive electronic files via the Internet from the newspaper publishers. These files are then distributed via the Internet to printing units, where the newspapers are printed and distributed to customers [Newspaperdirect].

PEPC receives a PDF-file from the publishers once a day, which are the sent to a PEPC vending unit via satellite. The customers are then able to print out the newspaper from the PEPC vending unit, which today are possible to find at six places in the Netherlands [Pepc News].

NewsBox has a similar solution to the print-on-demand technology as Newspaper Direct, where the PDF-documents are received from the newspaper companies via the Internet.

Since the print-on-demand concepts mentioned in figure 1 are dependent on the material received from the publishers, development of print-on-demand solutions should focus on the content management at the publishing house. However, in order to improve the print-on-demand concepts the printing process and the transmission of material should also be improved. The printing should be cheaper, provide better quality regarding color and readability and the printing output as well as the transmission of material should be faster. Still, the primary goal for the printing process should be to provide a faster printing output.

We argue that the print-on-demand concepts used today do not utilize the possibilities that print-on-demand can offer the readers and the advertisers. This was a starting point for our research project, which have resulted in the NewsEngine concept.

3. Description of NewsEngine

The NewsEngine, which is a concept for producing individualized print-on-demand newspapers, demands that the content should be stored in a database [Rosenqvist, 2000]. The content, both information and advertisement, must be structured according to certain rules, in order to re-use the content as well as search for stored content. The NewsEngine should automate the editing process to the highest degree possible. However, some publishers wish for a certain degree of manual adjustments, which will make 100% automation impossible.

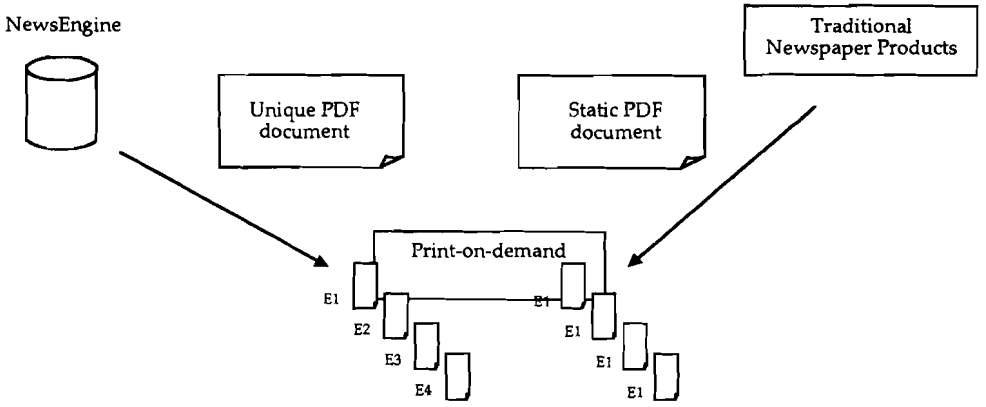

Figure 1: The document from the NewsEngine. Each document can be different regarding content.

The editorial content and the advertisements should be separated in two different databases, a News Database and an Ad Database. In order to structure the content in these two databases, the content should contain metadata, which is a description of the content [Turpeinen, 2000]. Some of the metadata for the content in the News Database should be category, writer, key words, date, source, news value and placement in the template. The metadata for content in the Ad Database should be category, date, key word, advertisers, zone and special target information, e.g. number of printed copies, time for distribution, interest etc.

The content can be divided into Real Time Material (RTM) and Stored Material (SM). The RTM is material which is produced during printing production and then sent to the NewsEngine either wireless or not. SM is material stored in advance in the NewsEngine database.

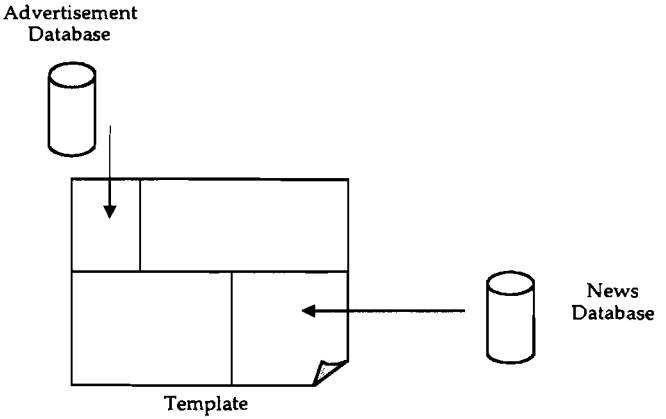

Figure 2: The material is fitted into the template directly from the advertisement database and the News database.

The content, imposed in a template, should be designed-to-fit. All pages should be designed by a prioritization order. This prioritization depends on which material that should be published. Either the editorial material should be prioritized or the editorial material should be imposed depending on how the advertisement booking is managed.

One or several different templates can be used. The degree of automation can vary depending on the design of the template. A higher degree of automation will demand a higher degree of design-to-fit template. If the degree of automation is 100%, the editorial material and the advertisements should automatically be placed in the template. However, in order to be flexible a certain degree of manual adjustments should be manageable.

4. Changes in the Editorial Workflow

The editorial process will be changed when using the NewsEngine system. The demand of work in the composing process should be changed to select content and to add metadata to describe the content. This change implies that the focus should be at selecting information to publish, rather than to edit the material into the templates.

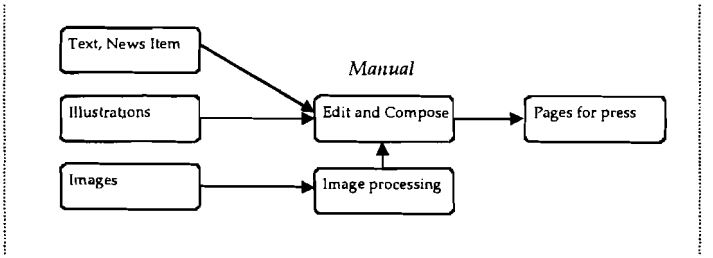

Figure 4: A modified figure of the editorial workflow for printed newspapers [Sabelström Möller, 2001].

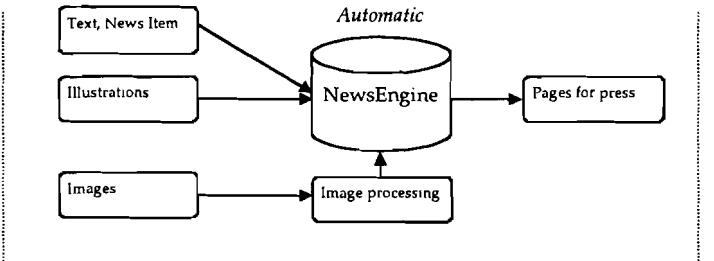

Figure 5: The editorial workflow with the NewsEngine. The editing and composing of pages will be processed automatically with the NewsEngine.

5. A possible application for the NewsEngine

The NewsEngine concept can be used for a several number of applications. One application is the event concept, which aims to supply newspapers at an event. These newspapers will be updated during the event and distributed at specific places at the event area.

Stored material as well as real time material will be used in the printed newspaper product. The journalists (J) and photographers (P) will produce real time material during the event, shown in figure 5. The real time material will then be transmitted wireless to the NewsEngine. However, in order to compose the material at the correct place in the template, they have to add metadata to the produced and selected information.

The NewsEngine will then automatically mount the real time material and the stored material into the template. The editorial product will then be sent as an electronic file to the printing units, which are placed at the event area. The product will be printed, either on-demand by the readers or when the publishers would like to. In order to shorten the distribution process the readers will be able to receive the product at the printing units or nearby the printing units.

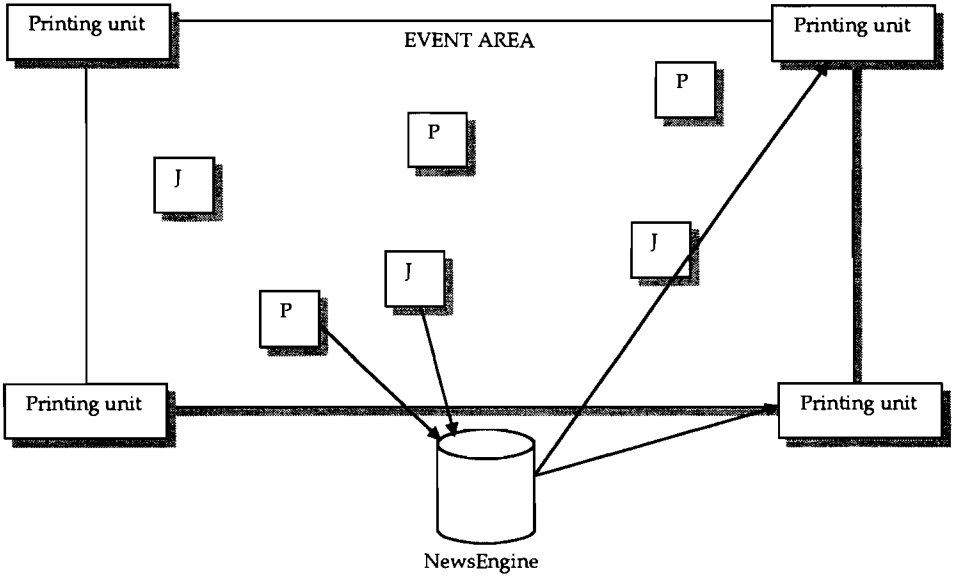

Figure 6: The flow of information for the event application.

With the event concept it is possible for the publishers to produce different editions or edition versions at different printing units. It is also possible to offer the readers to choose among different types of information, which then can be printed at the printing units. This will result in an individualized product. However, the eligible information must contain metadata and be packaged according to certain specifications.

6. Discussion

By introducing the NewsEngine concept it will be possible to offer variable content with less degree of manual work. The content can be changed from one copy to another, and therefore it is possible to offer personalized newspapers.

The production of personalized editions will be easier and faster with a NewsEngine solution. The lead times from produced edition to distributed copy will be shorter.

The readers will be able to receive personalized newspaper products and the advertisers will be able advertise to specific and targeted groups or individuals.

At an event editorial field workers can be used, which will change the working methods for the editorial staff. The collected information has to be sent to the NewsEngine by the editorial staff and then the information will automatically be imposed at specific places in the template. The time from gathering of information to a produced product will be shorter compared to the working methods used today.

Satellite production will enable a shorter and less rigid distribution process, and possible eliminate the distribution process. It is also possible to offer on-demand delivery and personalized products, since the readers can be able to choose their own information to be printed.

This information can also be published via the Internet, which will enable personalized web pages or personalized e-mails.

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