

**Proceedings of the
Asia - Pacific Regional Seminar
on
Information Technology
for
Newspaper Publishing**

**11-14 April 1995
Madras, India**

Organised by

The Ranganathan Centre for Information Studies
Research Institute for Newspaper Development
and
The Hindu
in co-operation with UNESCO

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Preamble

In Asia and the Pacific, the political and social climate has been rapidly evolving towards support for a pluralistic and independent press. However, the many vibrant small and medium-sized newspapers in the region are facing serious organizational and financial problems in fulfilling their roles. New communication, information and informatics technologies, which have been successfully applied by this sector in the industrialized countries, have proven difficult to adopt in the region because of lack of information on technological developments, social and cultural reticence, problems of cost and maintenance, and often, the need to adapt technologies to the national or local languages.

The Ranganathan Centre for Information Studies (RCIS), the Research Institute for Newspaper Development (RIND) and *The Hindu* jointly organized in cooperation with UNESCO the Asia-Pacific Regional Seminar on Information Technology for Newspaper Publishing. The principal objectives were to inform newspaper professionals of developments in information technologies, to appraise them of implications for newspaper publishing in the region, and to discuss possibilities for regional cooperation in this area.

UNESCO National Commissions and national press institutes of the region, as well as professional and development assistance organizations, had identified candidates with responsibility for information technology in newspaper publishing from among whom the participants were selected by the organizers.

The Seminar was attended by participants active in newspaper work in 12 Asian countries, four international resource persons and representatives of the Asia Foundation, Union of African Journalists (UAJ), the International Labour Organisation (ILO) and UNESCO.

The seminar discussions covered pre-press technologies, newspaper production technologies, and post-press information products. The seminar was organised in nine technical sessions and a plenary session. Besides, there were an inaugural function and a valedictory session. There were invited presentations by resource persons and state-of-the-art country reports from the Asia - Pacific region.

Each technical session was devoted to a specific theme :

Session 1 Information Technology for Asia - Pacific Newspapers

Session 2 Handling of Scripts of Asian Languages

Session 3 Handling of Indian Scripts

Session 4 Computerisation of Newspaper Publishing

Session 5 The Newspaper Production Process

Session 6 Information Management in Newspapers

Session 7 Sociological and Economic Aspects of Computerisation

Session 8 Economic and Legal Aspects of Information Accessing

Session 9 Regional and International Co-operation

The plenary session summarised the major findings of the seminar and proposed a series of recommendations.

The addresses delivered at the inaugural and valedictory sessions, abstracts of the technical sessions, the country reports, and the recommendations proposed are published in these proceedings.

Seminar Programme

Asia - Pacific Regional Seminar on Information Technology for Newspaper Publishing

11-14 April 1995

INAUGURATION

9.30 a.m. on Tuesday, 11 April

Welcome	: Shri N Ravi Editor, <i>The Hindu</i>
Scope of the Seminar	: Dr John B.Rose Communication Division, UNESCO
Inauguration	: Dr M. Anandakrishnan Vice Chancellor, Anna University, Madras
Chairman's	: Shri C. Subramaniam Chairman, RCIS
Keynote Address	<i>Impact of Information Technology on Newspaper Publishing</i> Shri K.M. Mathew Chief Editor, <i>Malayala Manorama</i>
Vote of thanks	: Shri N. Murali Trustee, RIND

Tuesday, 11 April

- 11.15-12.30 **Technical Session 1**
News gathering and text transmission, access to external sources, role of networks, computer mediated communication
— **Alan Boyle**
- 12.30-13.00 Country Profiles
— **Hongqi Zhou, Peter Lomas ***
- 14.15-15.30 **Technical Session 2**
Handling non-Roman Scripts of Asian Language Papers and Demo
— **John Clews**
Handling the Khmer Language in Newspaper Publishing
— **Mao Mayon**
- 16.00-17.00 **Technical Session 3**
Handling non-Roman Scripts of Asian Languages Demo and Hands-on
— **Shashank Bhatt**
- Evening Visit to The Hindu

Wednesday, 12 April

- 09.30-12.30 **Technical Session 4**
Digital printing, editorial work, subbing, layout, page making, scanning computer to plate etc.
— **Philippe Maeght, Thomas Jacob**
- 12.30-13.00 Country Profiles
— **Mao Mayon, Chencho Tshering Abdul Razak**
- 14.15-15.30 **Technical Session 5**
New printing technologies: keyless offset, water based ink, waterless offset, flexo, digital, colour in newspapers and quality maintenance
— **Philippe Maeght, K. Balaji**
- 16.00-17.15 **Technical Session 6**
Internal documentation, press archives, indexing, vocabulary control, retrieval
— **Justin Arundale**
Indexing and Information: Archival Practices at The Hindu
— **H.R. Mohan, M.P. Govindaraj**

* Unable to attend in Person

Thursday, April 13

- 9.30-11.00 **Technical Session 7**
Sociological and management aspects of information technology applications to newspaper publishing: management inputs; human resources development; interlace between ad. agencies and newspapers; changing role of desk journalists
— **K.S. Ramakrishnan, Oon Ee-Seng**
- 11.30-12.30 **Technical Session 8**
National, regional and international regulations and policies relating to information technology in newspaper publishing
— **T.M. Chowdary**
- 12.30-13.00 Country Profiles
— **Mehrnnoosh Jafari, Owais Aslam Ali**
- 14.15-16.00 **Technical Session 9**
International and regional Co-operation issues
— **V.N. Chhabra, Yves Courier, John Rose, Oon Ee-Seng**
- 16.15 *Drafting Committee meets to prepare overall conclusions and recommendations*
— **Oon Ee-Seng, John Rose, John Clews**

Friday, 14 April

- 9.30-12.00 Plenary Session
Consideration, approval and adoption of conclusions and recommendations
— **Yves Courier, John Rose, Oon Ee-Seng**
- 12.00-13.00 Valedictory Address
— **Mr. S. Narendra**
Principal Information Officer, Govt. of India

Scope of the Seminar

John B. Rose .

Mr. Chairman, Mr. Vice-Chancellor, Distinguished Colleagues

It is a great pleasure to convey to you the greetings of UNESCO in cooperation with which this timely Regional Seminar is being organized by the Ranganathan Centre for Information Studies, the Research Institute for Newspaper Development and The Hindu.

Throughout Asia and the Pacific, the political and social climate has been rapidly evolving towards support for a pluralistic and independent press. However, both new and established newspapers in the region are facing serious problems in maintaining their viability in this competitive environment. New communication, information and informatics technologies can do much to improve both efficiency and quality in newspaper publishing in Asia and the Pacific, but have proven difficult to adopt because of lack of information on technological developments, social and cultural reticence, problems of cost and maintenance, and, often, the need to adapt technologies to the national or local languages.

To help resolve these difficulties, UNESCO has lent support, within its Communication Programme in which I am working, its General Information Programme which is responsible for library and information activities and is represented hereby by my colleague Yves Courier, and its Intergovernmental Informatics Programme, to this "Asia and Pacific Regional Seminar on Information Technology for Newspaper Publishing". This meeting is intended to consider opportunities for computerization and automation in newspaper work from a systems approach, by addressing in an integrated manner the various processes involved : (1) news gathering and access to information, (2) editing, (3) pre-press composition, and (4) plate making and printing, as well as internal documentation services and new products such as databases which are becoming possible in the information era. Therefore, professionals from throughout and outside the region responsible for these different steps in the publishing process have been invited : journalists, editors, documentalists and production managers, as well as representatives of concerned regional and international non-governmental organizations.

In the modernization of publishing activities, technological change is inseparable from the associated adaptation of social and organizational structures, and of professional responsibilities of newspaper personnel. The achievement of effective and lasting technological innovation thus requires a commitment to re-negotiating authority and

* *Unesco, Paris.*

responsibility along with the corresponding rewards. For this reason, UNESCO has been very pleased to work with its sister body, the International Labour Organization, represented here by Ms. Ann Herbert, in the planning of this activity.

Appreciation is also particularly due to the Asia Foundation, which has cooperated in planning this meeting and offering support for a number of participants,

The objectives of the meeting will be :

- to review the state-of-the art and trends in the use of information technology in newspaper publishing in Asia and the Pacific and internationally;
- to explore how information handling principles and techniques can be used to improve newspaper publishing in Asia and the Pacific, taking into account the technological options and the specificity and diversity of the countries of the region;
- to formulate the recommendations for regional and international cooperation in this area, with special attention to the problems of small and medium - sized newspapers and to the least developed countries of the region.

The report of the seminar will be widely disseminated in Asia and the Pacific, and is expected to provide a basis for useful follow-up activity at the national and regional levels with appropriate support from concerned international organizations. In addition, it is foreseen that your work and presentations, along with the discussion documents prepared for this meeting, will provide the essential source material for a research study on the role of technology in newspapers in developing countries planned to be published next year by UNESCO.

I wish you very fruitful deliberations and am at your disposal, along with my colleagues, to facilitate your work in any way.

Inaugural Address

Journalism and Information Technology

Dr. M Anandakrishnan *

The Ranganathan Centre for Information Studies (RCIS) deserves our compliments for its timely initiatives in organizing seminars of immense relevance relating to recent developments in Information Technology. During the past year, it has organised seminars on such topics as Newspaper Data Bases, CD-ROM, and Library Management involving eminent experts and serious users, These seminars have helped to assess the status of assimilation of Information Technology by different users and the direction needed to facilitate its future growth in a concerted manner.

Technology Changes

There are four standards of technology changes that are rapidly penetrating different spheres of national endeavors. The advances in hardwares in the form of computers, monitors, sensors, printers, duplicating devices, etc. have found widespread usage during a relatively short span of time. The development of software technologies through new platforms, new languages, expert systems, application packages, etc. have become prolific and more user-friendly. India, particularly Madras, stands in the forefront of this development, New materials technologies in crystallography, thin films, fibre optics, magnetic materials, laser materials, etc. have contributed to the growth of Information Technology, The telematics devices including satellites, receivers, modems and networks have found rapid applications in a variety of fields.

These technological developments have significantly influenced the newspaper industry. Compared to a few years ago, the newspapers have improved not only in quality and format but also in content and coverage. However, such improvements through use of Information Technologies is seen more in the English language newspapers and considerably less in the vernacular papers, with some exceptions such as *Malayala Manorama*.

Implications

These technological changes will be reflected in altering the environment of the work-place of the newspaper industry. Some of the conventional machinery from news editing to printing of the newspaper will necessarily give way to more sophisticated devices. Therefore, the journalists of the coming years would have to be proficient, not only in conventional fields of journalism, but should also be equipped with the capability

* Vice-Chancellor, Anna University, Madras

to manage Information Technology. The future managers and executives of the newspaper industry would be those who have a deep understanding of the potential of the Information Technology.

Information Technology offers a wide scope for several simultaneous editions in far off locations. The resulting competitive situation would compel the newspaper industry to use Information Technology extensively. This would be more true if foreign newspapers also enter our market.

Tele-access

Considering the nature of newspaper usage, it appears certain that the print media would hold its pre-eminent place with the readers even though the telematics may enable a reader to access newspapers through computer networks. Such networks would be useful only for occasional requirements.

However, it should be recognised that a typical newspaper publishes only a small fraction of the resource materials which it collects in the form of text, data and pictures. The developments in Information Technology would provide an opportunity for a better use of such materials to be accessed remotely by any user through appropriate packages. This would depend on the technical capability of the newspaper industry on the one hand, and the user needs on the other hand.

I am happy to inaugurate this Seminar which is very timely and appropriate in the context of rapidly growing interest in the Asia-Pacific Region in the use of Information Technology.

I wish the Seminar all success.

Chairman's Remarks

C. Subramaniam *

I am delighted to see so many participants to the seminar on 'Information Technology for Newspaper Publishing', from such a vast geographical area as the Asia-Pacific region. We have seen so many changes in this century, but none so fast and far-reaching as the changes brought about by IT. Information Technology has torn down geographical barriers and changed many a traditional assumption of time and space. Like me, there are some people who know how long it took a message to reach a distance of 100 miles. Now with a push of a button you send a fax message tens of thousands of miles away and the only snag is that your friend at the other end may be asleep when the message surfaces on his fax machine.

Organising this seminar has taught us so many lessons – so many facets of human reactions from various parts of the world began to emerge. Social changes are either directed such as legislative measures to increase postal or telephone charges and so on, or undirected, as it happens in Information Technology. Whether we like it or not, it is affecting the very rhythm of life everywhere. One was used to getting a letter ten days after it was written and it invariably took another ten days to reply. Today, however, IT has achieved the great feat of shrinking the world into a Global Village. We therefore see that anything happening in any part of the world can affect us. Our attitude to men and matters is changing and needs to change even quicker in the future. We have 3502 daily newspapers in all the principal languages of India, including English, in the sub-continent. And research is in progress at the Indian Institutes of Technology, Centre for Advanced Computing and the Central Institute of Indian Languages to adapt Indian languages into machine-readable form in computer language. Just as the *New York Times* appears simultaneously in New York and Tokyo, Indians too have been quick to change and there are different editions of say *The Hindu*, *The Times of India* and so on, appearing in different parts of the country.

Basically, one feels satisfied that technology is able to speed up certain mechanical processes involved in production. In Singapore the use of colour in newspapers such as *The Straits Times* to reach different strata of society is a well researched approach. But what is important is to recognise a new dimension to the social responsibility of journalists. They empower every citizen with the ability to know his rights and responsibilities and help him to lead a fuller life. Any change is a painful experience, I recently heard of some

* *Founder Patron, The Ranganathan Centre for Information Studies, Madras.*

threatened strike in a national newspaper because introduction of some technology would mean loss of overtime for workers. An OECD report, I think, mentions that as many new jobs are created as are lost by the introduction of technology.

And inspite of the fact that technology is so advanced that you can choose your news, you can read your news on your TV screen, I am sure the news in printform will continue to be the preferred medium for a long time.

I should like to congratulate UNESCO, which will soon be celebrating its Golden Jubilee, on tackling a problem such as the access to information, so essential for a democracy, and which is still largely possible through the printed word. I remember that it was in 1949 that UNESCO organised in Mysore an International seminar on 'Rural Adult Education'. Although the definitions of literacy and education are constantly changing, what remains is the unflinching faith of the founding fathers of UNESCO who said that "since wars begin in the minds of men, it is in the minds of men that defences of peace must be constructed", and this should be the objective for all newspapers to achieve. It is in that spirit this seminar has been organised and I sincerely hope that all our participants who have come from such far-off places as Bhutan, Beijing, Fiji and Iran will find this occasion a worthwhile experience and take back pleasant memories of this part of the world.

Keynote Address

Impact of Information Technology on Newspaper Publishing

K.M. Mathew *

Ladies and Gentlemen,

I am a Mathew, Mathew, a journalist. From the times of the Bible, the tribe of Mathews have been chroniclers.

Friends, the most fascinating Keynote Address on Information Technology was done some 2000 years ago by that Mathew.

Just recall how the heavens lit up at night to announce the birth of Jesus.

What a magnificent feat of information technology!

Compare this with a modern-day announcement in a classified column. Something that would read like: "Born a bonny boy, to Joseph and Mary..."

From the days of Mathew, the chronicler of the Bible, to this humble namesake, technology has always been up there . in the sky. There are important exceptions to this rule. I will come to it a little later. Generally, information technology has been up there . . broadcasting and satellites, what not! For advancement, we have been looking skywards.

Perhaps the first person who did it in an organised way was Arthur C. Clarke. He foresaw satellites and dissemination of information. He predicted: "In the struggle for freedom of information, technology, not politics, will be the ultimate decider...".

Decades later, when Communism fell apart in the USSR, we knew that CNN had played a greater role than the CIA.

Also, the satellites at the Clark ring, 23,000 miles above, have redefined sovereignty in information.

And, to put the record straight, the first country to use direct broadcasting by satellite was India. A one-year experiment in 1975-76, using an American satellite, was an attempt to see how far the service could be used to provide isolated rural communities with information and instruction.

The antenna was just chickenwire and sticks. Technically, the short-lived experiment was a success and was seen as such by the CIA.

By the end of the decade, it appeared that almost any satellite could be used to

* *Chief Editor, Malyala Manorama, Kottayam.*

transmit direct into people's homes if only they have a small dish and, of course, a television. The translational opportunities that this offered to an international media empire were limitless. Satellite offers the same prospects that rail-roads had offered for the barons of a previous era. This time the tracks lead around the world.

In the 1960s, science fiction frequently became fact in the U.S.A. In 1960, a scientist at Hughes aircraft in California built the first laser beam. In 1960, the world's first weather satellite was launched by the United States. Nick Holonyak invented the light-emitting diode, destined to become the most popular digital display in pocket calculators and electronic watches. Electronic telephones were produced. Computers began to be widely used. The ghostly glow of television spread and during the decade, 163 American magazines died, including the *Saturday Journal Tribune*. The television, Marshal McLuhan argued, has refashioned the world without boundaries. "Time has ceased, space has vanished. We now live in a global village, a simultaneous happening," he wrote in *Understanding Media*.

For two thousand years, as I said earlier, technology was up there, in the skies. We looked towards God and science fiction writers for images above. But today, it has changed.

Now, in the first half of 1990s, 'Communications' is the ninth largest industry in the United States and is growing at almost 10 per cent per annum .. faster than any other sector save health and medicine today. The pace of communications and their extent both shrink and expand the world.

Every part of the developed world can be instantly in contact with every other. But as the world shrinks, individual horizons expand. Arnold Toynbee pointed out decades ago that, in the 20th century, for the first time, it is possible for mankind to contemplate the welfare of the entire race.

In the beginning of the 21st century, the linkages will embrace the globe like a web of immense complexity. But as rail-roads joined some points and not others in the 19th century, so modern communications are unevenly spread. The information map of the world is like a weather map. It is dense over North America, Europe and Japan, scanty over the old Soviet Union and clear over Africa.

The pace of technological change in the world today is infinitely faster than anything that the world has ever seen. The Industrial Society is being replaced by the Information Society which is transforming the world's economy, its political institutions, the nature of sovereignty and traditional relationship between governments and peoples, between people and power. One hundred years ago, less than 10 percent of the labour force was involved in information activities. Today one half of the labour force of the U.S. works in the information sector.

The information revolution, as a force of change, has already occupied the prime slot. Economics has become secondary, and politics finishes a poor third. We are moving towards a world in which information production and distribution will overshadow all material production.

The information overload, to use Alvin Toffler's phrase, is both back-breaking and mind-breaking. There is a danger of a new kind of literacy gap stemming from unequal access to the resources of new communication and information technologies.

Democratic societies must consider issues such as unequal access to information. They have to weigh the implications of the literacy gap on concepts such as the consent of the governed. And what responsibilities do they place upon the so-called gate-keepers, the journalists and publishers whose tasks are to sift, distill, interpret and disseminate information?

But technology is not merely up there in the skies. On the ground, at times, it still does not know how to solve simple problems.

For instance, how effective is the technology in checking spelling? The 'spell-check' cannot distinguish between words that sound alike what they call homonyms. Electronics is dumb when it comes to S-E-A and S-E-E or F-O-U-R or F-O-R.

That is the first good news for journalists. You cannot replace people with electronics. There is another piece of good news. You cannot replace readers with machines.

On the international scale there is another consequence, It is the unstoppable spread of the American dream. The new communications networks are like a high megaphone blaring American messages across the world. The 'Information Super-highway' is a carrier of the American dream. Within the next ten to twenty years, it will be possible to have access to as many as 500 different TV channels, and one will be able to call up favourite news and entertainment shows according to individual schedules.

Computers, telephones, TVs, stereos, faxes and VCRs will become part of a single, integrated communication technology and perhaps be housed in a single unit. Portable telephones will become smaller, cheaper and more ubiquitous. Video displays will be available on handheld devices. Home video screens will be able to call up libraries of information from central sources at the touch of a button and get news... news of the moment airline schedules, shopping catalogues, etc. If it took 80 days for Phileas Fogg of the Jules Verne classic to travel round the world, a regular Internet user will be able to make the journey in 80 minutes.

Once we get connected by network to the 'Information Superhighway', the entire newspaper will be digitalised and will be available in many libraries and you can read the passage you want. Just plug the cord and press the button, and you get a copy of *The Hindu* or *Dinamani* or the sports page of *The Times*, London. There will be a content index for selection.

This will be possible only if the newspaper is published. So the newspaper has to exist. But not newsprint. *The Hindu* has to exist, has to be published and then digitalised and transmitted to the libraries of the world. The immediate threat then will be to circulation and advertisement revenue.

In the past few years, there has been a dramatic loss in newspaper advertising revenue and a decline in circulation. Though it has not taken place fully in India, we also will have to face it within a few years unless we take preventive action immediately.

In the field of circulation, we have good news from developed countries. The advent of the radio, and then the TV boom, have resulted in creating new subscribers for the newspaper. A listener or viewer wants more details. The figures available indicate that newspaper sales in many countries are picking up fast after initial loss.

The 1994 survey conducted by the International Federation of Newspaper Publishers (FIEJ) shows that the disparity in the percentage of population and newspaper circulation has increased over the past few years, particularly in advanced countries. Norway continues to be the world leader with 608 newspapers sold per one thousand people. Japan comes second with 576, and Finland with 512. The figures are available for 45 countries; India is at the bottom of the scale with 20. Compared to 1990, newspapers in Singapore, Spain, Turkey and Brazil were well-placed in 1993.

In advertising revenue also newspapers, after showing a downward trend, are bouncing back. The Japanese newspaper industry was suffering a significant advertisement cut-back for two consecutive years. However, it maybe heartening that this year it has shown a growth rate of nearly 4 percent. In the US also the recession is passing. Advertisements have shown a 4.1 percent growth in 1994. With the passing of the recession, newsprint mills which earlier had to cut down or sell at a very cheap price are in a seller's market.

All the marketing campaigns are now launched through the TV, radio and newspapers. Though the total advertising expenditure has grown the proportional advertising revenue has not come to the newspapers. It has gone to the electronic media.

If the print media in India is to survive it should take the responsibility to approach the market with a good strategy. It should convince the advertisers to choose newspapers for their campaigns. If this is done, Indian newspapers need not worry about the recession which the western print media had to face.

I quote Mr. M.J.Kulip, proprietor of a Dutch newspaper.

"In our new approach to the market which we started in 1992, we primarily want to concentrate on the strategic stage of the advertising process. It is in this stage that we have to convince the market to choose the newspapers for their campaigns.

It is therefore important to know who the decision-makers are in this stage and what their needs are.

There are basically three groups of decision-makers in the strategies stage of advertising process.

1. The advertisers themselves
2. Their advertising agencies (the account and media directors)
3. The creative directors in the advertising agencies

We have conducted our own market analysis by visiting the three groups and talking to them about their needs and about obstacles they encounter when dealing with newspapers. The conclusion was that there is a lot of work to be done if the image of newspapers is to improve among these groups. Because there are a lot of ideas and

prejudices about newspapers which can, if we do not do anything about it, cause a lot of damage to the positioning of the newspapers on the market.

Let us name some of the prejudices that exist in the minds of the decision-makers in the advertising process.

- * It is impossible to express emotions in the newspapers
- * Advertising in newspapers is too expensive
- * Newspapers are arrogant
- * Newspapers are read only by middle-aged men

Especially the first item on the list can be very dangerous to the managers of newspapers. It means that advertisers want to use newspapers for incidental and ad hoc activities, not for long-lasting brand-building campaigns. We have to deface their thinking in different ways.

Cebuco, another newspaper, has developed different tools to take away these prejudices and to satisfy the need of the three groups of decision-makers.

The advertisers are basically led by a very simple question: how do I obtain the greatest return of my investment? Their key words are : advertising effect, price/performance, communication capacity and target reach.

The latest tool *Cebuco* has developed to answer the advertiser's questions about the effect of advertising and communication capacity of newspapers are "Advertisers' Experiments". In these experiments we wanted to prove to the non-newspaper advertisers that advertising in newspapers actually works.

Seven advertisers were selected to participate in the advertisers' experiments. They were selected according to the following criteria :

- * They had to be non-newspaper advertisers. Most of them were large television advertisers.
- * They had to have a large media budget so that there was room for adding another medium, the newspaper, to their existing media plan.
- * They had to be seriously considering changes in their media choice.
- * And finally we selected prominent advertisers in their field so that they could serve as a model for other advertisers."

They also conducted a survey which clearly established that Coca Cola sales went up very drastically when their TV advertisement was supported by newspapers. I am only reconfirming that there is a misconception among advertisers that mere advertising in TV can make it work.

With the remote control in our hands and with channel after channel coming into existence and the high cost of advertising in TV, it is impossible to reach the target audience.

Unless it is supported by newspaper advertisements, advertisements will not have the desired effect.

It is an uphill task on the part of newspapers, the print media, to establish this aspect which M/s Cooko and Mr. Kulip, MD of *The Daily* have established. So the print media has to start campaigning on a very scientific basis and it is necessary to prove by experiments that the electronic media alone will not help a product to survive.

Just as the print media has to use the electronic revolution in a very scientific way for producing good quality newspapers, an advertiser has to use both media, and among them the print media more, for the sale of product.

This has to be established by research and by convincing the advertisers. The changing needs of the customer have to find a proper place in our approach: whether he is an advertiser or subscriber.

We live in an era where communication has become more global but the consumer's interests have become more local and more personal. The computer now provides the consumer the capability to understand differences and make preferences instead of emphasizing only similarities. Even though India may not reach that stage in the next 25-30 years, this is a possibility that we have to take into account. Positioning of advertisement within a publication has become a bigger issue as database marketing allows advertisers to better understand how and where their customers look for information. Colour reproduction and printing quality standards have become more important as magazines and newspapers exploit their possibilities.

Newspapers have to be up-to-date. The last year has seen unprecedented growth and change in the communication industry. This includes newspapers. The U.S. media futurist, George Gilder says now is the time for established newspapers to assert themselves as the leading information utility providers.

Instead of fighting the flow of advertisers away from print, publishers should capitalise on what he calls our natural franchise. What newspapers do better than any other industry, Gilder says, is to gather information, edit the information in useful modules, package that information attractively, and offer it for sales through a convenient delivery system. And much of that information is localised.

Gilder asserts that newspaper publishers are uniquely positioned to enhance their value and become significant players in this new electronic era ... both with editorial and advertising contents. And he is right.

One important aspect that is now taking place in foreign countries is the electronic data interchange, It is worth paying attention to. Electronic data interchange is the system that allows advertisers or their network or agencies to send and receive transactions or message data electronically. We have not reached such a state. But we might. Such data include insertion order, invoice and payments communicated directly to newspapers or their agents, and also transmission of digitalised creative work through on-line service, CD-ROM, floppy disc or any other digital courier.

We have to face the electronic media by making use of the electronic revolution for gathering information and production, thereby increasing the circulation. Newspapers like *The Hindu* and *Dinamani* have already facsimile page and picture transmission systems. To get the latest news, we have to have printing units near subscribers and thus reduce transporting time. If there is a big newsbreak in New Delhi at 2 a.m., it is now possible with digital transmission to have the news and picture in all the editions. In earlier times, for language newspapers, transmission was by Roman script and the paper had to get it re-transcribed, edited, composed, and sent to the press. Now, with the electronic revolution, the entire process is eliminated. A correspondent in New Delhi can, if the editor permits, straightaway go to the computer and the press. In the same way, a correspondent or a photographer can transmit pictures from any remote corner of the earth.

When we are surrounded by hurdles of technology, how do we make our publications more relevant in the rapidly changing society?

Here I want to place special emphasis on regional or provincial newspapers and publications and specialised publications in the fields of science, agriculture etc. In effect, even the rural and provincial newspapers are specialised publications. The larger metropolitan dailies find difficulty in identifying themselves with people. A newspaper is different from TV mainly because a newspaper can identify with the aspirations of the people; TV tends to be impersonal.

How to identify with readers? To quote one example, recently we, at *Malayala Manorama*, have introduced a system of offering scholarships to children of our readers. Children who get high marks in each district are selected and are given scholarships. This system has established a personal rapport with the readers. All over Kerala the death of a neighbour is known early morning only through newspapers.

We have to produce newspapers that are needed and relevant. We must report – and faithfully report – community affairs. By community affairs, I mean the affairs of the industry and the economy of the region. National newspapers which have started units in states will have to change their role also. The newspapers have to identify themselves with the aspirations, ambitions & problems of the readers.

The special advantage of newspaper over TV is that its news is available 24 hours. It is available in bed, garden, or toilet. A newspaper doesn't create the anxieties, confusion and insecurities that the visuals of TV create in the human mind. A newspaper is a place of record. Whether newspapers will survive will depend on whether they are relevant to the readers and the community and the future.

Ladies and gentlemen, I began recalling my namesake, Mathew. It is only proper that I recall him now. After all, he said that the first order of our Lord was, "Let there be word." I know, some of you will point out that it was a word SPOKEN. But God, when He wanted man to remember, chose the written word . . . he gave the tablets to Moses!

Who am I to question the word of the Lord? The written word is the one chosen by HIM.

Thank you.

Technical Sessions - Abstracts

Technical Session 1

In the first technical session, Mr. Alan Boyle (International Federation of Newspaper Publishers) presented a paper entitled 'Finding the Path: Information Technology for Asia-Pacific Journalists'. He stressed the continuous changes in technology utilization for newspaper management and publishing. In particular, he emphasised the role of electronic information sources in providing access to inputs for newspapers. In conclusion, Mr. Boyle pointed out that media managers should be aware of the opportunities and implications raised by new communication technologies. Whether we like it or not, telecommunication and computers are becoming as much a part of the newspaper industry as newsprint and ink. In this context access to electronic information sources is becoming an important component of issues relating to 'right to information'. In brief, the following suggestions were made :

- * Media managers should foster cooperation between sectors in business, academic and government interested in improving network access control, while loosening information control. This cooperation may include partnerships with computer networks and universities.
- * Regional and national press associations should consider access to government information through electronic media.
- * International media development organisations and media companies should work together to upgrade newsroom equipment for electronic communication.

Mr. Boyle stressed the value of the Internet in accessing electronic information sources. During the course of discussion the following major issues were raised.

- * Internet connectivity to Asia and Pacific Region.
- * Regulations relating to copyright.
- * The reliability and credibility of information flows through the Internet.
- * Sectors of information covered in the Internet were largely related to science and technology, while other sectors of information such as business and financial information are fast catching up.
- * The need for training newspaper media personnel in accessing electronic sources of information such as the Internet.

As part of this session, arrangements had been made for the demonstration of information retrieval from the Internet. This was made possible through ERNET with the help of the

local IIT and the Telecommunication Department, which installed a dedicated line for use at the session.

Technical Session 2

This session discussed the handling of scripts of Asian languages. Mr. John Clews (U. K.) presented a discussion paper on 'Asian Languages and Information Technology: a Summary of Issues for Newspaper Publishing'. The following points were raised in the presentation.

- * Evolution & characteristics of Asian languages.
- * Types of computers used in the newspaper industry.
- * Keyboard layout, character coding, printing and information retrieval using Asian scripts for Asian languages.
- * Information exchange in non-Roman scripts.
- * Machine translation and transliteration

He suggested that action should be initiated by governments, international organisations, private sector and individuals. Given the increasing pace and availability of computers, designers have to develop universal codes for script processing of Asian languages particularly helpful for the newspaper industry. The new technology can provide new opportunities for the development of the newspaper industry.

During the course of discussions, issues relating to the UNICODE, ISCII and other character set standards were raised.

Technical Session 3

Mr. Shashank Bhatt (C-DAC, Pune, India) presented a paper on Computer-Based Handling of Indian Scripts. In particular, he presented the features of GIST (Graphics and Intelligence-based Script Technology) hardware and software and gave a live demonstration of processing of Indian scripts, for which he had brought necessary equipment from C-DAC in Pune. During the discussion, Mr. Bhatt said that such packages for transliteration of other non-Roman scripts such as Khmer and other Asian scripts could be developed.

Technical Session 4

During Technical Session 4, the paper by Thomas Jacob of Asian Mass Communication Research and Information Centre (AMIC) and Philippe Maeght of International Association for Newspaper and Media Technology (IFRA) on 'Computerization and Automation of Newspaper Publishing in Asia and the Pacific', reviewed the application of IT under the headings:

- * pre-press applications
- * in-press applications and
- * post-press applications

The importance of telecommunication and computers in news gathering and transmission was emphasized. It was pointed out that even by the year 2000, news distribution will

essentially be through the printed newspapers. The paper reviewed the major developments in related hardware and software technologies. During the course of discussion, issues relating to problems in the adoption of IT in the developing countries of Asia were raised.

Ms. Ann Herbert (ILO) mentioned some of the sociological and economic problems in this regard. This was with reference to her visit to '*Economic Daily*' in Beijing, China.

Technical Session 5

Mr. K. Balaji (Sankha Graphics) presented in detail the pattern of work-flow in the printing of a newspaper. He emphasized the quality control aspects of newsprint, ink and print surfaces. He pointed out that IT must help in providing good quality newspapers to end-users.

During the discussion, issues relating to quality of newsprint and other inputs in Asia and Europe were discussed. Mr. Balaji mentioned that the quality varied not only from country to country but also from press to press. There was discussion also on waste management in the newspaper industry.

A video tape on forthcoming technologies for printing known as 'E-print' showed that the entire process of printing could be automated to provide printouts of newspapers from editorial desks.

Technical Session 6

Mr. Justin Arundale (University of Brighton, U.K.), in his paper, identified the three major components of information management in newspapers. He dwelt upon information science, techniques of handling current information, MIS for newspapers and the information retrieval process. Indexing and searching techniques relevant in this context were explained. The presentation particularly emphasized the need for creating newspaper databases and examined aspects relating to the structure of such a database. He recommended for consideration the formation of an Association of Media Librarians in Asia and the Pacific.

In continuation of this session, Mr. H.R. Mohan and Mr. M.P. Govindaraj (*The Hindu*, Madras) presented a paper on 'Indexing and Retrieval Systems in practice in *The Hindu*'. The basic entry structure of the index and the software developed for indexing and retrieval of information were explained. The general problems in newspaper indexing were discussed. Speaking on the advantages of computerization, they pointed out that end-users have been benefited by the practices at *The Hindu*. They also suggested the formation of a 'Newspaper Indexers Association'.

Technical Session 7

This session was devoted to the sociological aspects of switching over to new technology by the newspaper industry. Mr. K.S. Ramakrishnan (Director, RIND, Madras) in his presentation examined the issues relating to :

- * Adoption of IT vis-a-vis generation of additional revenue
- * Training and cost of training of staff in the use of new technology
- * The increasing entry of women into the newspaper industry.
- * The induction of IT giving rise to many new small magazines without a press of

During the discussion Ms. Ann Herbert mentioned the need for examining the implications for issues of work force deployment vis-a-vis new technology. It was clarified that continuous training of workers at all levels in the adoption of new technology will mitigate social and employment related problems. It was also emphasized that a proportional assessment of relative investment in human and machine resources should be made.

Technical Session 8

Mr. T.H. Chowdary presented an overview of 'National, Regional and International Regulations and Policies Relating to Information Technology in Newspaper Publishing'. He touched upon telecommunication and data network technologies becoming accessible and spreading to all countries. This, he said, has resulted in providing easy access to information. Private and government investments in these are increasing, and this calls for regulations, particularly economic and legal regulations. During the discussions Mr. Chowdary touched upon the advantages of liberalisation, problems of bureaucratisation and implications of other changes. He also touched upon issues relating to the Internet and its access to developing countries.

Technical Session 9

This session was devoted to regional and international cooperation. Mr. V.N. Chhabra presented his views on developing a network of agencies for information resource sharing, training and adoption of IT by newspapers in the region. This calls for technology transfer and know-how adoptions at various levels and appropriate to requirements of the newspapers in the region. The suggestion that an association of newspaper producers, journalists, IT promoters, equipment manufacturers and vendors be formed was made. Such an association would periodically benchmark software and hardware. He also forecast the emergence of demand for customised newspapers in the Asia-Pacific region.

**Supplementary Papers Presented
in the
Technical Sessions**

Handling the Khmer Language in Newspaper Publishing

Mao Mayon *

Introduction

Like all other non-Roman, scripts, the Khmer language faces unique problems when it is to be used in new printing technology. Like other Southeast Asian scripts (Thai, Burmese and Lao, for example), Khmer is derived historically from the ancient Brahmi script. This means that it is related to Indian languages which use the Devanagari script like Hindi and Marathi.

Like the languages using Devanagari script, it uses both a syllabic and an alphabetic system. The script is complex and consists mainly of :

- ★ 33 consonants
- ★ 32 consonants used as subscripts
- ★ 6 consonant ligatures used as a subscript
- ★ 15 independent vowels
- ★ 25 dependent vowels
- ★ 18 consonant/vowel ligatures
- ★ Various other less frequently used signs, punctuation, ornamentation, ligatures and numerals.

Problems faced in handling the language

The language is written with a basic unit of CV (one consonant and one vowel), with several additions and variations. These could include upto two super and subscripts plus signs.

The language is written from left to right as in Roman scripts, but calligraphy is complex. The language is not written phonetically, but with the main consonant or vowel in the middle, with other subsidiary vowels, consonants, superscripts and subscripts above, below, and on both sides of it.

* *Manager, Pracheachum Printing House C/o Unesco Box 29, Phnom Penh, Cambodia*

One simple example would be the word 'strei' (woman), similar to the Hindi word 'stree'. In Khmer it would be written as follows :

Though the word is pronounced in the following order : 1-s 2-t 3-r 4-ei, it is written 3-r 1-s 2-t 4-ei.

This complexity means that the process of composing Khmer text is slow compared to an English equivalent. The practical difficulties include :

- ★ Because of the nature of the language, there could be upto six or seven different levels in which characters are written within a single word, counting super and subscripts and other additions.
- ★ There are no word-breaks, or spaces between words, in Khmer. There are only phrase-breaks (gaps between phrases). This means that unlike most other languages, it would be possible for entire lines in a newspaper column to have no gaps at all.
- ★ The complexity of the writing means that Khmer takes up, on an average, more space than an equivalent in a Roman script.

In the earlier method of composing pages by hand, there were upto 286 possible characters which could be used. This made the process painfully slow. For example, composing a news paper-size page in Khmer could take upto four hours.

With the advent of computers, the big difference has been that time is saved. A skilled typist can now type with a speed of upto 40 words per minute. But computers have brought with them their own problems.

Khmer is a very new entrant into the computer scene. Computers were introduced into the country only in 1990 and slowly their use is spreading to offices all over the capital Phnom Penh, though not very much outside it. Khmer has presented some unique problems to those trying to develop Khmer language programs. These include :

- ★ Computer and typewriter keyboards have been invented with a basic Roman script in mind. They are not equipped to handle a radically different script system like Khmer, with a far greater number of characters directly. Several possibilities are being worked out and the Khmer keyboard is yet to be fully standardized.

There are presently upto 4 types of keyboard systems in typewriters and computers, one of which was created by UNTAC. All of them have had to leave out some lesser-used characters because of the limitation on the number of characters a keyboard can hold. Despite this, each key can be used to create about 4 characters using different functions.

- ★ Until recently, most computer software was not able to produce characters in the range of different shapes and widths required by Khmer. But now some — like the Macintosh system, UNIX and Windows 3.1 allow for this flexibility on specially created Khmer programs.
- ★ Flexibility is also required in placing, superscripts, subscripts, and signs above and below the main character. In Khmer, super- and subscripts are normally aligned to the right of the character around which they are placed. But signs are centered over

a character, or placed between two characters. Software with this level of intelligence has recently become available.

- ★ As mentioned earlier, there can be a maximum of six to seven levels in which characters may be placed within a word. While present systems do make most Khmer words possible to type, even the best programs are as yet unable to combine all the possible levels that can exist within a word. This means that some characters within a word overlap each other and a space has to be manually inserted between them for clarity.
- ★ Computer functions that an English user would take for granted, like searching, sorting by alphabet and spell checking are not possible in Khmer as yet.

Despite these problems, however, computers have meant a revolutionary improvement for printing, in terms of speed and quality. However, as pointed out, there are still some deficiencies. These could be overcome by a determined effort on behalf of software manufacturers to produce a top-quality Khmer language program.

The question is, will there be such an effort? The present programs themselves have mostly been the result of individual efforts of software program writers interested in Khmer. Companies, understandably, concentrate on languages with larger potential markets like Chinese, Japanese, Korean or Thai.

The market for Khmer is small and is not growing at a rate as fast as some others in Asia, so the improvements will probably be slow. But even as it stands, the new information technology is a welcome and mammoth improvement for printers and publishers.

***For technical information about Khmer fonts and computers, I am indebted to Maurice J. Bauhahn, UNESCO Survey on Khmer Font Coding, July 1993 (UNESCO Cambodia).*

Impressions of a visit to the Economic Daily in Beijing

Ann D. Herbert *

In 1986-87 a seamless computerized process from data inputting to the production of film was set up at the Economic Daily through the collaboration of computer scientists from Beijing University and with financial support from the government. The Economic Daily was chosen as a test case for the computerization of Chinese newspapers and the results of the experience were widely disseminated throughout the country.

One of the main technological advances that accounted for the success of the experiment was the development of the WUBI method of accessing the vast Chinese character set with relatively few key strokes. It enables a data inputter to enter 6000 Chinese characters an hour; a traditional typesetter averaged only 6000 characters per day.

Three obvious changes resulted from the introduction of information technology.

- ★ Productivity increased dramatically;
- ★ the workforce was transformed ;
- ★ a major health hazard (lead) was removed from the working environment

Productivity Gains

Before the introduction of IT, a production staff of 60 plus 10 recasters were needed to produce the Economic Daily. After the new production system was introduced, a total of 80 production workers turned out 6 daily newspapers and 100 periodicals. By taking on the production of these other publications, the Economic Daily managed to transform their production unit from a cost centre to a profit centre.

Transformation of the workforce

- ★ An initial decision was taken to retain those production workers who were under 40 years of age. Older workers were redeployed.
- ★ Information technology raised the required skill levels and hence the market value of production work. Production workers at the Economic Daily now earn an average much more than experienced journalists. Their basic wages of RMB Y 200 a month are topped up by individual productivity bonuses and work group bonuses to reach an average of RMB Y 900 - 1000/month.

* *Service Sector Occupations and Activities Salaried Employees and Professional Workers Branch, ILO, Geneva.*

- ★ The educational background of production workers is both higher and more varied. Entry level positions demand 3 years of technical college plus targeted computer skills.
- ★ Women have largely replaced men in what used to be an entirely male workforce.

Healthier work environment

- ★ The arduous production tasks (lifting heavy plates, covering tremendous distances in search of type) have been eliminated.
- ★ A clean working environment is the norm.
- ★ Lead has been removed from the working environment. Indeed, the success of computer based production led the authorities to ban the further use of lead within the city limits.

Indexing and Information Archival Practices at The Hindu

H.R. Mohan and M.P. Govindaraj *

Introduction

As most of the general information is published in newspapers, unlike books and magazines, the reference value of the newspaper increases with age. When a reader searches for general information, he wants to know where to find it with least effort, with utmost quickness and with degree of accuracy, an index to its contents is an absolute necessity. Hence, the newspaper index is a book of records and a master-key to the treasure house of facts and knowledge locked away in the files in microfilms and original bound volumes.

For the past 118 years, *The Hindu* has been keeping its readers well informed of the happenings at home and abroad through exhaustive coverage of news, views and features on all walks of life. The newspaper is on microfilm and the index from 1881 to 1987 in manuscript. From 1988, the index is in machine readable form with over 500,000 entries.

This paper presents the indexing and information archival practices at *The Hindu*.

Indexing Practices at *The Hindu*

The Hindu was founded in 1878 as a weekly. In April 1889 it became a daily. At present it is being printed at eight centres across the country and has a circulation of over 500,000 copies.

As for *The Hindu* Library and Index, to start with they were separate. In 1975, the Management decided to merge them into a single unit, making it more homogeneous in structure. Apart from books, particular mention is to be made of the photo collections both published in the newspaper as well as unpublished ones. It may be of interest to note the library holdings include 200,000 books; 15,000 reports; 20,000 pamphlets; 2,000 maps; 200,000 photographs; 300,000 transparencies and 400,000 clippings, *The Hindu* of more than 100 years is preserved in microfilm form besides the bound volumes.

The Hindu Index can broadly be divided into four phases:

The first phase covers the period 1881 to 1936 and is in manuscript form. It is not a subject index as being done today but an index grouped under their respective alphabets. This was just the beginning.

* *Systems Manager and Chief Librarian respectively of The Hindu, Madras.*

The second phase consists of eight indices maintained during the period 1937 to 1978. They are:

01. *Indian News Index*
02. *Foreign News Index*
03. *Editorial Index*
04. *Special Articles & Letters to the Editor Index*
05. *Legal News Index*
06. *Sports Index*
07. *Photos and Maps Index*
08. *Editions Index*

These indices are in bound registers with entries in alphabetical order. For eg. *The "Indian News Index"* deals with news items concerning India alone. Likewise the other indices have been prepared according to the nature of the news coverage. All the indices except the "*Editions Index*" are on the news items that were published in the City Edition only. The "*Editions Index*" is the news items that have been published in the Editions other than the City i.e. Tamil Nadu Edition, Andhra Edition and so on.

In the third phase i.e. the index from 1978 onwards, all the eight types of indices have been combined into one single index for better searching process, since too many types lead to difficulties and delay in retrieval. The bound volumes are arranged chronologically on the shelves of the stack room.

In the fourth phase of indexing i.e. from January 1988 onwards it is computerised. The printed index of 1992 has 65,600 entries; 1993-78,200 and 1994-86,000 entries.

Apart from *The Hindu Index*, indices for the following sister publication are also being prepared.

<i>The Sportstar</i>	a weekly sports magazine
<i>Frontline</i>	a bimonthly features magazine
<i>Business Line</i>	a business daily started in Jan, 1994.

The library also maintains indices for its large collection of photographs, both published and unpublished, along with transparencies supplied through the agencies both in general and sports categories.

Computerisation of The *Hindu Index*

The Hindu index is in existence from 1881 onwards in manuscript form. Attempts to computerise the index of *The Hindu* started in 1987. The studies included from the exploratory planning and evaluations of the system to writing down the computer programmes and a prototype was developed and demonstrated to the management for approval. The prototype was approved and an exclusive minicomputer system with provision for 16 users was procured for this purpose.

Consequent to computerisation and to bring orderliness and consistency in the system, the following were attended to:

Classification of News: The newspaper publishes news and views on various subjects but under broad classifications. Hence, items were classified and codified for incorporation in the Index. eg. 0001 - News; 0002 - Advertisements; 0003 - Agriculture etc. An exhaustive list is available for reference.

Index Organisation: A three level system was planned with the first level being the main subject, the second level viz. sub-heads to integrate closely related news and the third level normally serving as a "Geographical Facet".

A list of subject headings was drawn up. They normally refer to India and to the subject in general. Some are treated as common subject heads and refer to both national and international news.

Style Book: A style book viz thesaurus has been prepared for in-house reference, to ensure uniformity and consistency in keywords and to maintain control on vocabulary. This takes care of the different presentations in reporting by various agencies.

Abbreviations List: A list of abbreviations in addition to the standardised existing ones were prepared for the ease of data entry and retrieval:

Synonyms List: A list of synonyms was also generated to take care of the name changes, broadening a keyword etc.

Index Data Sheet: An index data sheet for each news item was devised to have the following attributes and details.

a) News attributes

Serial No	:	of the document
Period	:	Date of publication
Stpg	:	Starting Page
Col	:	Column of the news (a,b,c...f)
Endpg	:	End page
Class	:	Classification No.of the news item
Type	:	Graphics (maps, pix, charts, diagrams)
Form	:	Format of item (Articles, News, Letters, Interviews etc.)
Geogra	:	Geographical Facet (States, Natl., Intl., World)
Edition	:	City, Bangalore, Delhi, Hyderabad, etc.
Pix	:	Bust, Action, Group
Col	:	Yes/No (For pixs.)
Reused	:	Yes/No (For pixs.)
Author	:	The contributor/news agency

Note: These attributes are also treated as keys for information retrieval.

b) Abstract

An abstract of the news is furnished with a maximum of 350 characters. This is a boon to the information seekers as with the gist of news abstracted, the need to look at the original has become unnecessary in more than 80% of the cases. However, the abstracting takes considerable amount of time and requires a different type of skill. The practice of abstracting is to be continued till the time we could down load the full-text and store them for retrieval from the type setting system.

c) Keywords

Provision for 15, with a maximum of 50 characters each

d) Index Entries

Herein the actual indexing of the news is recorded. The index is in three levels. There is no restriction on the number of index entries per news item,

The Hindu Index System

The Hindu Index system is based on the subject access by keyword. The software has been developed in-house. Since the system has to deal with information stored in loose structure as against the clearly defined field structure as in the case of DBMSs, it was developed using the high level language, COBOL and conventional file systems comprising of indexed relative and inverted files.

The system broadly consists of five modules as under:

- 1 Data entry/edit
- 2 Database update
- 3 Modifications
- 4 Retrieval
- 5 Housekeeping

The data entry/edit and retrieval are multi-user modules and allow many users to perform the data entry and editing tasks. As the other modules alter the database, they are executed under single user mode by authorised library system personnel.

The system was implemented on the HCL Hewlett Packard Magnum, a MC 68030 based minicomputer initially and now is running on an Intel 486 based minicomputer having the following configuration:

Intel 80486 cpu with 32 MB RAM; Three one GB HDDs; one 1.44 MBFDD; one 525 MB CTD; 16 ports I/O controller for connecting 16 users.

The operating system is based on industry standard UNIX System V Rel.4.2. The entire application is written with shell routines over the individual modules to provide screen based user interface.

Files associated with the system

1. The main document file containing all the information relating to the news item with abstract.

2. Keyword master which stores all the keywords and aids during the data entry/edit and retrieval.
3. Abbreviation master which stores standard and frequently used abbreviations. Helpful for entry/edit and retrieval.
4. Synonyms master maintains related terms for a given keyword and is useful to broaden the search.
5. Inverted key reference file which gets generated during the update module, provides the direct reference to the documents under each keyword.
6. Index file generated at the update module and is useful for printed index.
7. Work files and control files for entry, retrieval, statistics and house-keeping.

Retrieval of Information

This retrieval module allows multiple users to retrieve information. Each user opens a session with the system and makes queries. Upto 96 queries per session are allowed. The queries are keyword based. The query can be on a single keyword or with two keywords joined by a Boolean operator such as 'AND', 'OR', 'NOT'. The new query can be combined with the earlier queries to narrow down/broaden a search. On completion of furnishing the query string, the system arrives at the number of hits for the query and displays the same against the query.

Some of the other features of the retrieval help to :

- ★ browse and select a keyword for the query.
- ★ provide support for ambiguous search using wildcards.
- ★ provide support for abbreviations and synonyms.
- ★ navigate between screens of queries to formulate a new query.

The user can view the hit records by selecting the display option and furnishing the query number. The default is the latest query and the records are displayed on the screen one by one in the chronological order.

Some of the display features help to :

- ★ further narrow down by author/period/geographical facet.
- ★ browse the references by moving forward and backwards.
- ★ look at the other keywords associated.
- ★ view the full-text of the news.
- ★ print the references.

The print option allows the user to spool the query references to get a hardcopy at a later time. One can print all records/first few records/last few records/look and decide to print the reference of high relevance.

The retrieval session details with queries and retrieved information can be saved for future use. This allows for resumption from a given point after a break.

Implementation

The prototype was developed in 1987 and approved by the management. The system was implemented with full features in early 1988 for the City Edition. *The Hindu* is published from various printing centres under eight regional editions to satisfy the regional readers by covering local news items in detail. The index for these regional news items is done without abstract.

We started initially with *The Hindu* news and extended the system to other publications *Frontline*, the fortnightly features magazine and *The Sportstar*, the weekly sports magazine. The index for published photographs and unpublished transparencies were also computerised subsequently with necessary changes.

The Hindu ventured into the publishing of a full-fledged business newspaper-Business Line starting from January 1994. From the first issue, the indexing is being clone.

Printed Index

In the middle of 1991, it was decided to take up the printing of the index relating to the City Edition of *The Hindu* alone and to extend it later to other editions. A separate system on PC under FoxPro environment was developed. This system generates text data for typesetting the printed index pages using desk top publishing.

The printed index of Ott-Dec. 1991 was brought out on a trial basis. Finding it acceptable we made this a monthly from January 1992 with a cumulative annual volume at the end of the year. The first annual volume of 1992 was released in June 1993 under the auspices of the Madras Library Association.

provision exists in this system for including the full-text along with the index and seeing the same at retrieval. The idea for the inclusion of full-text along with the index entries is to encourage SDI service as readers may have varied interest. A working demo version of this system is available.

An attempt has been made to bring out an exclusive printed index of the supplements which normally carry informative articles, features, serials and developments in the field of education, science & technology, business, sports, entertainment and a host of subjects like gardening, health, cookery, philately, arts, travel, leisure, adventure etc. The maiden 1994 volume with over 7,500 entries have just come out. This, we hope, will generate news and possibly will lead to separate service namely clipping service.

The present status of the system include the availability of the following databases for the users:

1. *The Hindu News for 1988 & 1989*
2. *The Hindu News from 1990*
3. *Frontline News from 1988*

4. *The Sportstar News from 1988*
5. *Published Photos (covering both general and sports)*
6. *Unpublished transparencies*
7. *The Hindu Business Line News from 1994*

The size of the database with related files exceeds one GB and the number of records on-line exceeds 500,000.

Information Archival

The published information of all publications is archived in various forms for storage and retrieval.

Traditional Methods

All the publications are microfilmed for permanent archiving. Reprographical facilities are available for searching. A reader printer is used for reading and taking print-outs of searched information.

The original "newspaper files are also preserved in bound volumes.

Clippings from different sources are maintained subject-wise in folders

Full Text Storage

For the past one year, attempts are being made to download the full-text from the typesetting system and store them for full-text retrieval (FTR). The typesetting commands are removed and the text is reformatted with additional information such as publication, classification, elate, page and column references. Reference is made to photographs, charts published, if any, along with the text. Each news item is treated as a file and the files relating to a particular day are compressed and stored as a single file. The compression is done to save the storage space and for easy maintenance of file system.

Presently, ISYS, a C - based text retrieval system is used for internal retrieval by the library staff. A working module is available for demonstration. A full-fledged FTR facility is being planned to be extended to all with the help of a high end FTR software like BASISPlus or TOPIC which are under evaluation. These high end software work on multi-user systems, integrate images, texts and provide superior retrieval features such as concept trees, relevance ranking etc.

Wherever possible, Optical Character Recognition (OCR) techniques are employed using the software such as Omnipage, Recognita etc., to convert the original source documents into text for storage and retrieval.

Initially, the full-text will be stored on magnetic media. Studies are also on to store the information in optical media with suitable retrieval engine to facilitate mass distribution.

Document Image Management Systems

The document image management systems, scan the original documents to convert them into images and store them with keywords and other reference information to facilitate retrieval,

The preservation of the original manual indices in old volumes numbering over 3000 anti clippings are being considered for archiving by converting them into images with the help of document image management systems. Most of the present day systems are Local Area Network based and work on windows workstations. Systems like PageKeeper, Odyssey, PowerFile etc. are being studied along with an integrated desktop electronic filing system-Canofile from Canon.

Conclusion

The indexing and archival system has been helpful to the library staff in answering the user queries much faster. The users, mainly the reporters and editorial staff, find the printed index, the outcome of the systems a key reference source for their needs. The computerisation has increased the need for providing the full articles to the end users and necessitating us to expand the activities in the area of full-text retrieval and document image management.

International and Regional Cooperation Issues : The Challenge of Change and Cooperation

Oon Ee Seng *

Introduction: The Challenge of Change

Journalism is on the threshold of change. New developments in desk-top publishing and satellite and telecommunications technology, the so-called "digital superhighways", present fresh challenges.

While technological innovation brings along obvious benefits, it can also pose a threat to independent publishers. Gone are the days when independent publishers can afford to rest on the laurels of editorial policy and content; they now have to face the "threat" posed by the vast networks of electronic superhighways. Threat in the sense that besides increasing competition from broadcasting networks, independent publishers have to contend with the monopolistic translational networks of electronic superhighways that will be able to offer faster and more sophisticated information to the global information - hungry society.

In the midst of this revolutionary process of change, independent publishers in the Asia-Pacific region have to work out global and regional strategies to ensure their survival as the information society and economy take shape.

The Increasing Imbalance

As the vast networks of electronic superhighways are and will be monopolised by a few transnationals, there is a great danger that the existing imbalances in access to information networks are accentuated, not eliminated.

As newspaper publishers are in the business of selling news, they will find themselves increasingly isolated in the information society if they are not prepared to pay a high price for the cost of equipment, software, connections to the networks and the cost of the services. The cost factor alone may discourage many small publishing houses from joining in anti being part of the information race,

Computing for the Community

As said earlier, gone are the clays when newspaper publishers can afford to rest on the laurels of editorial policy and content. Publishing houses have to be abreast with

* *General Secretary, National Union of Journalist, Malaysia.*

technological changes to play an active role in the information economy. Information is essential to ensure democracy and transparency in society and easy access to information is necessary to ensure active and informed citizenship. Access to information also ensures free competition and a balanced economic environment. In this context, it is essential that the information society is developed within a framework that ensures easy and free access to information. Publishing houses should play an active role to ensure that community networks are made easily available to all who need information.

Areas of Co-operation

In the wake of technological developments in the information society, there is an increasing need for publishing houses to co-operate and pool their resources to ensure that they are not left far behind in the information race.

Setting up an Asia-Pacific Superhighway

To redress the imbalance in the monopoly of information superhighways, there is a need for publishing houses in the Asia-Pacific region to pool their resources in co-operation with Unesco to set up their own network of superhighway for the region. Access to this regional superhighway should be easily and freely available to the regional and international community.

Access and Pluralism

Publishing houses in the Asia-Pacific region should launch a campaign to ensure that all electronic superhighways give due consideration to pluralism and that they be easily and freely available to even the remotest regions. In this context, publishing houses should campaign for a regulatory framework to ensure that all media products take into account the specific nature, in particular their cultural and sociological impact of audio-visual programmes whatever their mode of transmission.

Advent of Desk-Top Publishing

Desk-top computing is now an essential editorial and production tool of publishing houses to reduce costs as well as generate faster, more efficient and better media products. In this context, media and publishing houses should share their expertise and develop better and cheaper desk-top publishing hardware and software. As it is, the development of desk-top publishing techniques has given rise to the possibility of publishing houses doing all their desk-top publishing on personal computers instead of depending on expensive hardware as in the past. From full-page on the screen, the publishing industry is expected to go into full negative pagination soon.

Sharing of Resources

The development of the modem means that publishers in the region can now share news and data "live". Many publishing houses in the region have come out with Library-On-Line services to store their daily news and data. Some publishing houses have even offered these services to institutions and the public for a small fee. It is time publishing houses come out with arrangements to share their databases. This means that journalists in the region can now go into other's Library On-Line network without cost for background or other data.

Training and Exchanges

Publishing houses should pool their resources to intensify training in information technology and desk-top computing. In this context, there can be exchanges between publishing houses for their staff to gain new experiences and knowledge. Publishing houses can also work on common computer "languages" for easier communication.

Acknowledgments: Special thanks to Aidan White, General Secretary of the International Federation of Journalists, and Christopher Warren, Joint Federal Secretary of the Media, Entertainment and Arts Alliance, of Australia for excerpts from their background papers - "Access and Pluralism" and "The New Information Economy: A Strategy for Journalists."

Country Profiles

IT Application in China's Publishing Industry as Reflected in the Growth of *China Daily*

Hongqi Zhou -

I feel greatly honoured today to have this opportunity to discuss with you information technology for newspaper publishing. My discussion will focus on news gathering, access to external sources, computer mediated communication and some existing problems regarding the application of information technology at my newspaper, *China Daily*.

***China Daily* Group of Newspapers.**

Before I start, please allow me to briefly introduce to you *China Daily*, the only national English language newspaper in China. *China Daily* was officially founded on June 1, 1981. As you all know, China adopted reform and open policy in the late 1970s. As the country opened its door wider to the outside world, more and more people from foreign countries, especially those from the West begin to be attracted to China not only by its long history and unique culture but also by the tremendous changes which were taking place in its economic and social life. A foreign language newspaper, especially an English one, was badly needed to help them understand more about what was going on in China. It was under this circumstance that *China Daily* was born, serving as a window on the developments of China's reform and opening to the outside world.

After almost 14 years, *China Daily* has developed into a newspaper group publishing six English language newspapers. *China Daily*, the flagship publication of the six titles, is a 12-page broadsheet daily published from Monday to Saturday, offering timely and latest news about China and the world, and focusing on China's political, economic, cultural and social developments. *Business Weekly*, an eight-page broadsheet on Sundays, covers the latest financial and market trends, joint venture developments, domestic economic laws and policies, investment opportunities, analyses of industries, company news, and foreign trade. *China Daily* and *Business Weekly* are China's most frequently quoted authoritative sources of information on the world's wire services and in the international media. They are printed in Beijing, Shanghai, Guangzhou, Xi'an, Hong Kong and New York with distribution reaching more than 150 countries and regions. *Shanghai Star*, a 16-page tabloid published every Tuesday and Friday in Shanghai, East China, follows the economy in the country's largest city and keeps its readers well-informed on the economic and social developments and opportunities in the whole Yangtze River Valley. *Beijing Weekend*,

* Deputy Director, Computer Technology Department, *China Daily*.

a 16-page tabloid published on Fridays, introduces to its readers the life and people, shopping and sightseeing, food and entertainment in Beijing. *21st Century*, an eight-page tabloid published on Wednesdays, is designed to meet the needs of the Chinese people learning English and focuses on current cultural and social topics and world affairs. *Reports from China*, an eight-page monthly tabloid, is distributed in North America with Publishers' Auxiliary, the trade newspaper of the National Publishers Association of the United States. To meet the growing Western interests in China, the monthly carries in-depth features on a wide range of issues: economy, finance, business, culture, science, education, travel, and journalism,

Printing was one of the four great inventions contributed by ancient Chinese people to the world civilization (the other three were paper-making, gun powder and the compass). But up to the late 1970s, lead type printing was still popular among the Chinese newspapers. It was in the 1980s, that information technology began to be applied in newspaper industry in China. With the birth of its first newspaper in 1981, the growth of *China Daily* Group well reflects the technological revolution in China's publishing industry.

In the early days, *China Daily* reporters wrote news stories on typewriters, checked and corrected errors with pencils, and then put the stories in a basket. Editors just picked up the stories from the basket, used pencils to correct remaining errors, asked reporters to insert the necessary facts, and wrote headlines for the stories on hard copies. Then it was the typists who typed the edited stories into VDTs (Video Display Terminals) for resetting, and fed them into a Photocomposition machine that printed them out in narrow columns. The narrow and long strips were cut into several pieces and pasted onto page forms. After a page was done, the entire page was photographed with a giant camera and a light weight printing plate was made from the negative. Due to its late coming, *China Daily* was able to narrowly escape lead type printing.

Now all reporters and editors of *China Daily* group work on personal computers which are connected together on a network. Reporters write stories, check spelling, correct errors, delete or insert words, rearrange entire sentences or paragraphs easily on the screen. When a reporter finishes writing a story, he just types the keys and stores it into a server until the editor is ready to retrieve it, correct remaining errors, write headlines and store the edited story into the server, ready for pagination. Edited stories, photos and other information are retrieved and pasted on page forms on big computer screens. Finished pages are sent to a laser image-setter which produces standard-size negatives for making printing plates. Stories, photos, and other information are all stored in the server and flow on the network. Everything is done electronically.

Having presented a brief introduction about *China Daily* Group, now I would like to discuss in some details the following aspects :

News Gathering — Computer Literacy Is a Must

Reporters and editors of *China Daily* Group are all English majors. Reporters do interviews in Chinese or English, but write stories directly in English on computers. At the very beginning, due to shortage of personnel and lack of news sources, most of the news stories were translations of articles from major Chinese language newspapers or came

from official Xinhua News Agency, the largest news agency in China. Very few were staff written. Along with the country's opening up, *China Daily* Group has established stable and close relations with news sources, and has been putting on more and more staff written stories. Today, the majority of its stories are staff generated.

China Daily Group now employs more than 130 reporters and editors, mainly stationed in Beijing. It has also set up correspondent offices in Shanghai, the country's biggest city in East China, Guangzhou, a coastal city in South China bordering Hong Kong, Xi'an, an ancient capital city famous for its terracotta soldiers and horses in Northwest China, Kuming, a city of eternal spring in Southwest China, and Shenyang, a heavy industrial base in Northeast China. It is planning still more offices across the country. Staff-written stories mainly come from Beijing and those offices. As I have said earlier, our reporters and editors are all English majors, and write and edit English news stories directly on computers. Typewriting as a profession has disappeared. This is different from other Chinese language newspapers which still employ professional typists to type Chinese characters on to the computer. This is because typing Chinese characters is more complicated, and professional training is needed.

Our reporters have established close relations with governmental organizations, cultural institutions, businesses and celebrities which are our major news sources. They either go to interview these organizations or people, or are invited to attend press conferences to gather news stories. In addition to the Beijing headquarters and local correspondent offices, our reporters also tour other places across the country frequently, and sometimes go out to cover important events in other countries, and send their reports back to the headquarters through fax which will be typed into the network by someone at the headquarters. Nevertheless, in most cases, they just quickly and easily transmit their reports or photos directly into the headquarters network through computer mediated communication: a notebook computer, a modem and telephone lines. The problem is that some of our reporters and editors know very little about computers and are not keen to learn more about them. They usually can do what they are exactly told to do and if there is any problem or a breakdown, they are often at a loss as to what to do next. Another problem is that transmission is often interrupted and errors frequently occur due to the poor quality of telephone lines in China.

Photos taken by our staff photographers are scanned with computer-assisted scanners and stored in the server. Negatives and slides can also be scanned. When a photographer is covering an event outside the headquarters (the Asian Games in Japan, for example), and equipped with a notebook, portable scanner and modem, he or she is able to scan the negatives into the notebook and send the data back into the network in Beijing. Though digital camera is available today, most of the photographers are reluctant to accept it partly because they are more comfortable with their old cameras and simply do not bother to learn a new technology. They are more accustomed to paper prints rather than electronic data and prefer to print out the negatives though film scanner can omit this step, saving time, photographic paper and solution and improving the quality at the same time.

Means of news gathering of *China Daily* Group can be more effective and the quality of its newspapers can be further improved if its reporters and editors are more computer

literate and aware of the increasing importance of information technology in newspaper publishing.

Access To External Sources - A Limited Preferential Treatment

Although stories and photos by our staff reporters account for a large share, external sources play a significant role in diversifying news coverage of *China Daily* Group newspapers giving them a facelift.

Official Xinhua News Agency is one of our important sources of news stories and photos. We receive news stories from the English service of Xinhua News Agency 24 hours a day. The stories are transmitted at 2400 bps through local telephone lines and modem directly into our network. But the poor quality of local telephone lines (mainly noise and echo) presents hazard to transmission. When noise or echo is too loud, transmission can be interrupted for hours or even days, and it is quite possible to miss some important news. Xinhua News Agency also sends us 20 to 30 photos everyday, also through local telephone lines and modem. The same problem as in the transmission of stories occurs, and some of its JPEG files cannot be decompressed and opened due to transmission errors caused by the poor quality of local telephone lines.

Due to historic and policy reasons, newspapers in China do not have much access to external sources. Official News Agency is almost the sole news source to most of them. However, China Daily Group is an exception in this regard. As an English language newspaper group whose targeted readers are foreigners, it has been given some limited preferential treatment. As you may or may not know, the Chinese government adopts preferential policies towards Sino-foreign joint ventures to encourage foreign investment. *China Daily* Group is in a similar position to those Sino-foreign joint ventures. Thanks to its unique function, it enjoys access to some foreign news sources which are presently inaccessible to other newspapers in China. After being given the go-ahead by the department concerned, *China Daily* Group obtained access to Reuters picture and financial news services.

According to our contracts with Reuters, Reuters Hong Kong headquarters provides us with pictures on world affairs and financial news and stock listings through satellite. The pictures, mostly coloured ones, are received and processed in a Macintosh and then sent into our network. The financial news and stock listings go into an IBM compatible personal computer on our network. Except for Xinhua News Agency, *China Daily* Group is the only newspaper in China which is authorized to have direct access to picture service offered by a Western wire service. Even the *People's Daily*, China's number one newspaper, can only get AP photos via Xinhua News Agency.

China Daily Group also buys news stories and photos from some other news services, mainly in the West. It also has some exchange programmes with newspapers in Hong Kong, Singapore, Japan and some other countries and regions. With such access to external sources, *China Daily* Group publishes the latest international news stories and the best world news photos among the newspapers in China. International news published in *China Daily* Group newspapers appear usually one day or even two days earlier than that in other newspapers in China. Actually some contributors just translate the news stories in

China Daily Group newspapers from English to Chinese and send them to some Chinese-language newspapers for publishing.

With improved page design and news quality, *China Daily* Group is able to further raise its reputation both at home and abroad. It has become the most frequently quoted source of information on the world's wire services and in the international media compared with other newspapers in China. China-based diplomats and journalists increasingly rely on *China Daily* Group newspapers to follow the latest developments that they miss in the Chinese language press. Some foreign news services are impressed by the stories and photos published in our newspapers and have showed great interest in co-operating with *China Daily* Group. This is because, if a high quality newspaper uses their products, their reputation will rise accordingly. AFP and UPI, for example, have expressed their eagerness in offering us their services after they saw our successful co-operation with Reuters. Unfortunately, they did not know that Reuter picture service is already a hard-earned preferential treatment for *China Daily* Group and its access to other services of the same kind is unlikely to be granted at least at present due to historic and policy reasons.

Venture Into Electronic Services — A Long Way To Go

Thanks to the development of information technology, *China Daily* Group is now able to offer electronic services.

China Daily Group's first venture as an information supplier started in June, 1992. It was a contract with Data Times, headquartered in Oklahoma City, the United States. According to the contract, *China Daily* Group provides all its staff generated materials in its *China Daily* and *Business Weekly* over which we have copyright. *Data Times* calls to retrieve the data from a separate database over ordinary long distance telephone lines at 9600 bauds, and then distributes the data through its channels. Not enough time has elapsed before *China Daily* Group can achieve remarkable returns from its electronic services.

Computer Mediated Communication — Much Remains to Be Done

Today, *China Daily* Group will not be able to operate without computer mediated communication. When reporters are covering events outside the headquarters, they just carry with them a notebook and modem and send their stories and photos back into the headquarters net-work. We have successfully transmitted news stories and high quality photos from Japan and the United States to Beijing. All local correspondent offices are connected with the headquarters through computer, modem and telephone lines. *China Daily* Group's access to external sources and its electronic services fully rely on computer mediated communication.

The most important communication activity for *China Daily* Group is the transmission of *China Daily* and *Business Weekly* pages from Beijing to printing plants in Shanghai, Guangzhou, Xi'an, Hong Kong and New York. Transmission to Shanghai is performed on a point-to-point basis through computer, modem and ordinary telephone lines at 9600bps. The quality of the pages transmitted to Shanghai is perfect but the speed is too low, about 20 minutes a page. If the number of pages increases, this means will not be practical.

Negatives of *China Daily* and *Business Weekly* are airmailed from Beijing to Xi'an, and the newspapers can only reach subscribers and be available at news stands late in the afternoon in the area. Guangzhou gets negatives from Hong Kong which first receives the pages from Beijing. When the negatives arrive in Guangzhou on the express train linking the two cities, it is often 10 to 11 a.m. Transmission to Hong Kong and New York has not yet been computerized but is through a 10-year old Telepress System. The pages are scanned, compressed and then sent out through dedicated lines at 9600bps, usually 20-30 minutes a page. The quality of the pages received in Hong Kong and New York is poor due to low scanning resolution. Occasionally the photos on the newspapers printed in Hong Kong, New York and Guangzhou (since Guangzhou gets the negatives from Hong Kong) are blurred. What is even worse is that the old machine, which should have been retired after being in service for 10 years, breaks down frequently. Our engineers are often called late at night to fix the machine. To tell the truth, everyday our engineers work on tenterhooks and pray that the old machine can keep running before being replaced.

It has become really urgent for us to replace this old machine with more advanced, more convenient and faster computer-mediated satellite transmission. The bottleneck in transforming this page transmission is the lack of money and high speed transmission lines. After almost a year of hard effort, finally we are able to rent a 400K satellite line from the Asia-I Communication Satellite and raise enough funds to start the transformation project. After this project is completed, earth stations will be set up in Hong Kong, Shanghai, Guangzhou and Xian one after another to receive pages. Hong Kong station will act as a relay to transmit the pages to New York through 6K optical fibre, since North America is out of the satellite's coverage. This computer satellite transmission will reduce the transmission time by about 10 times, from 20 minutes to about 2 minutes a page, and improve tremendously the quality of the newspapers since there will be no loss of information in this way. Meanwhile, this broadcast transmission will facilitate the introduction of new earth stations in the future within the coverage of the satellite.

Conclusion - Problems to be Addressed

In a rapidly changing society, information technology is playing an increasingly vital role in the very survival and further development of newspapers in China. *China Daily* Group, which once enjoyed and still enjoys a prominent place in China with its English language newspapers, is facing unprecedented challenges from emerging English publications across the country. Provinces and cities are publishing their own English language weeklies and monthlies to assist their opening up to the outside world. In order to win a foothold in this competitive publishing industry and maintain its advantageous position in the future, *China Daily* Group will need to fully apply information technology. To do this, in my opinion, the following three aspects are crucial:

Computer literacy is essential. Only those who are computer literate can fully utilize information technology. For our prospective clients, if they are computer illiterate, they will not be interested in our electronic services. As I have mentioned above, in China today, there are not enough computer literate executives who should be the main customers of our electronic services. This presents a major obstacle to the distribution of our electronic services. This problem cannot be addressed by *China Daily* Group alone. Rather, it requires

an increasing recognition of the importance of computer culture. The staff of *China Daily* Group is not adequately computer-minded either. Some reporters and editors can only do what they are exactly told to do by the computer manager. Even striking a wrong key, they will be at a loss as to what to do next. Sometimes because of their wrong or illegal operation, the whole system breaks down. When computer people try to identify the problem, even they cannot offer a clear explanation as to what they have done. Our staff photographers, for example, are unwilling to accept digital cameras which will make their reporting more timely and transmission of their photos to Beijing easier and faster when they are covering an event outside the headquarters. They are more comfortable with the old way of developing films, printing copies from negatives, and keeping the prints on file. Therefore, it has become quite necessary to train the staff of *China Daily* Group in computer knowledge in order to fully apply information technology.

Improvement of China's communication facilities has become urgent. China is still very backward in terms of communication conditions. Satellite and other high speed communication is not accessible to many companies within its boundaries. Only several big cities are linked with one another through optical fibres. Telephone lines cooperation with Reuters Historical Text Division was our second venture which started around the fall of 1992. This time, *Shanghai Star* was included and materials were more selective, with lighter feature materials being cut out. We changed the method of transmission to sending our materials into our Beijing Telecom's E-mail box at local, domestic phone rates, Reuters in London would call into our E-mail box at international long distance rates anti be responsible for the sales.

China Business Information Network (CBnet) is the latest electronic service provided by *China Daily* Group. CBnet is a multiple database, providing business news on China. Foreign corporations manufacturing or marketing in China, universities studying China and governmental organizations dealing with China can find the information they need conveniently from CBnet. CBnet services include:

a) The CBnet Database — Each day, CBnet's staff gather business stories, translating and organizing them under specific headlines. CBnet also serves as a digest of several national database in China. It works closely with the State Information Centre, the State Statistics Bureau and the State Administration for Industry and Commerce. Furthermore, there is a "Weekly In-depth Analysis" from a distinguished panel of scholars, journalists and economists, drawn from newspapers, universities, and think tanks in the Chinese government. This group of experts offers weekly insights on recent events as well as their analyses of future business trends.

b) The China Daily On-line — This is a databank of *China Daily* and *Business Weekly*, fully indexed since July 1, 1993. It is an invaluable documentation of the Panorama of business, cultural and political events shaping today's China.

c) E-mail Service — This is a communication link between CBnet and its clients, allowing subscribers to request additional information as needed. For example, CBnet offers a "Media Monitoring Service". When requested, it can respond quickly and confidentially through its E-mail service.

CBnet's operation is quite flexible. Clients can make their own searches, pinpointing and retrieving specific information on any topic in the database. Or they can designate the information they want through CBnet E-mail service and let CBnet find it for them, saving them time and effort.

All the above-mentioned CBnet services are accessible inside and outside China with a modem-equipped computer.

Since electronic services are something new offered by *China Daily* Group, it takes time to promote sales of the electronic products and attract a satisfactory number of subscribers. One of the obstacles to the distribution of our electronic services is that there are not enough computer literate "executives" who are the main customers. There may be more researchers or secretaries who are computer literate, but they may not be able to persuade their bosses to subscribe to new and relatively unknown services. As I have discussed earlier, most of the communication activities at *China Daily* Group are performed through ordinary telephone lines. Not only transmission speed is low, resulting in longer transmission time and higher costs, but also transmission is often interrupted and errors frequently occur due to the poor quality of telephone lines. Poor communication also hampers the distribution of the electronic services of *China Daily* Group since it is difficult, expensive and time-consuming for foreign clients to call and retrieve data through ordinary long distance telephone lines. The potential of information technology will fail to be fully tapped unless China addresses the problems in its existing communication facilities, anti reliable high speed transmission means, such as satellite and optical fibre, become popular. Fortunately, the Chinese government has selected communication as one of its top priority industries and adopted a favorable policy to encourage investment in this field. Hopefully, communication will gain momentum in a few years to come.

However, if access to external sources remains limited as it is in today's China, improved communication will not be able to play its clue part in further promoting the application of information technology in the newspaper industry. *China Daily* Group is lucky compared with other newspapers in China since it is granted preferential treatment to enjoy some limited access to foreign sources. To most other newspapers, external sources, especially Western sources, are almost inaccessible due to historic lessons and policy reasons. From my personal point of view, this situation is not in line with China's progress in opening up to the outside world. Though *China Daily* Group is authorized access to some foreign sources, it is limited and far from enough. Some foreign wire services, such as UPI and AFP, as I have mentioned earlier, have offered on their own initiative to co-operate with *China Daily* Group. But nothing has come out of it. Global information revolution is transforming the newspaper industry and reducing the importance of boundaries, geographically and politically. I hope and I believe, along with the further development of China's reform and opening up drive, newspapers in China will enjoy more freedom in gaining access to external sources.

Ladies and gentlemen, before I conclude my speech, please allow me to extend my gratitude to the host who has made it possible for me to discuss with you in this marvelous city information technology for newspaper publishing.

The Pacific Way of Newspaper Computerisation

Peter Lomas *

So what are these Pacific Islands anyway?

Imagine if you head south-east from Madras, across the Indian Ocean, past the Malay peninsula and Indonesia. There, lying before you, will be the greatest ocean on this planet, the Pacific. It has been described more than once as the world's largest newsbeat. Across its far-flung islands, desktop publishing has transformed who owns newspapers and who reads them.

The Islands

Thousands of years ago migration waves brought people down from Southeast Asia into the islands that dot this vast sea. They became the first Pacific Islanders.

The region known as the Pacific Islands covers nearly one-third of the earth's surface. Scattered across it are some 10,000 islands and atolls. They are home to more than six million people, some of the world's newest independent nations, and some of the least developed. There are also islands and nations rich in their own languages, cultures, history, and traditions.

In the Western Pacific there are high, volcanic islands, blessed by agricultural, forestry, and mineral resources and rich in potential.

To their East and North, you will find increasingly crowded low coral atolls devoid of land-based resources. They look to fish and minerals of the surrounding sea for their future, and worry about global warming and rising sea levels.

This is a region in which there are now 14 independent nations. The extremes are considerable.

The nine low-lying atolls of Tuvalu are home to just 10,000 people. The scores of islands and rugged mainland of Papua New Guinea, occupying the Eastern half of the world's biggest island, New Guinea, are home to more than 3.5 million.

But while the islands and people of this vast region are scattered thousands of kilometres apart across the ocean, and diverse in language, culture, and people, they are also united.

** Editor-in-chief, Islands Business group, Suva, Fiji and Training planner, Pacific Islands News Association, unable to attend in person.*

This is a region drawn together by the unique island lifestyles and common experiences of its people. The Pacific Way is a way of life.

Pacific Islanders are linked by the strength of their cultures, the wars, voyages and alliances and experiences of the past, and the many challenges they face today.

Many are connected too by their emergence from a common colonial experience. Britain, the United States of America, and France, and in earlier times Spain, Germany, and Japan, colonised the Pacific Islands.

Today most of the people of the Pacific Islands have once again regained control of their own affairs. They are no longer isolated dots on the map of a vast ocean. They are part of the world community. They are also a Pacific Islands community that is increasingly facing the challenges of the march of global integration brought about by new information technology.

Fiji's Minister for Education, Culture, Science, and Technology, Taufa Vakatale, told a regional group recently:

“As communications and information practitioners in a region where tradition and culture remain strong, you have a major responsibility to explore the potential impact of technology and the development of modern communications on our people in the Pacific.”

This then is the region known as the Pacific Islands. It is the area in which the people who publish newspapers have overcome special challenges.

What about the Newspapers?

Newspapers came to the Pacific Islands with the early European settlers, the Christian missionaries, and the colonial powers. The English-language daily newspaper, *The Fiji Times*, for example, began publishing in 1869.

Well into the 1970s, much of the mainstream press was still colonial rather than indigenous. Control was still largely in the hands of expatriates from outside the region, or colonial governments.

The newspapers were mostly printed in English or French, the colonial languages, rather than the national languages.

The cost of printing equipment, and the resources and people needed to produce a newspaper, kept the power of the press in a small number of hands. But with decolonisation came the beginning of a revolution. It is a revolution that has seen :

- ★ Pacific Islanders increasingly gain control of the press of their region;
- ★ The continuing emergence of a pluralistic news media, with the growth of locally-owned independent newspapers and magazines throughout the Pacific Islands.

Computerisation

The revolution in Pacific Islands newspaper publishing was driven by computerisation, and especially the advent of desktop publishing. Desktop publishing mainly using the

Apple Mac but also IBM compatibles was the right solution at the right time for the aspiring indigenous publishers.

The languages of the Pacific Islands, with one exception, use the Roman alphabet; so the introduction of computers was easy. The computers made it simpler and cheaper to produce a professional-looking publication. New newspapers and magazines sprang up.

In some countries, such as Western Samoa, the impact went far beyond the development of a more pluralistic press and a freer flow of information. The rapid growth of newspapers boosted the development of Samoan as a written language. Where the Bible and other church literature were once the primary source of reading in the Samoan language, one daily and eight weekly newspapers of many hues are now on sale in a country of just 170,000 people. They provide Samoans a ready source of reading material in Samoan. Some are church papers. Others are run by crusading journalists intent on shining light into the darkest places. Some are little more than translations of the *I Saw A Two-Headed Alien In A Flying Saucer* type of stories from the worst of the American supermarket tabloids. But together they have encouraged a growth of reading in the Samoan language.

In many countries, professional typesetting and printing equipment had been owned by government printing departments, the churches, or foreign media magnates such as Murdoch and Hersant. Desktop publishing put the power of the press into the hands of the people.

Publishing a newspaper was suddenly affordable, especially in countries which had direct air links to New Zealand, Australia, or Fiji, the Pacific Islands country with the most developed publishing industry. The new breed of weekly newspaper publishers didn't have to have their own platemaking equipment and printing press and the staff to run it. All they needed was a small desktop publishing system, with software such as Word, PageMaker, and Freehand, and a laser printer. They could then send their completed pages by air to New Zealand, Australia, or Fiji for printing and the newspapers would come back on the next flight.

Journalists previously limited to working for government information departments branched out to establish their own independent newspapers and magazines. Often these were the first their countries had known. The arrival of newsroom computerisation also made daily newspapers more viable in the small communities of the region. With reporters able to enter their stories direct into the computer, anti editors able to lay out and output pages themselves, the economies of production changed. Large, often inadequately trained and inefficient, production departments began to disappear, with only platemakers and presshands now essential. Gone was the dependence on typesetters, proofreaders, and layout artists. In 1990 there were just three daily newspapers being published in the independent nations of the Pacific Islands, only one of them locally owned. Five years later there are six, three of them locally owned.

Challenges

While the new technology brought success across the Pacific Islands, it also brought issues which had to be addressed; e.g., the daily newspaper the *Fiji Sun* in the Fiji capital of Suva (population 100,000) was the first in the region to move into new technology and

replace the traditional way of doing things. *The Sun* was launched in 1974 by a mix of foreign and local shareholders. It used the offset system of production common to smaller dailies of its size and era. Reporters wrote stories on typewriters, subeditors edited them with pens or pencils, and laid out dummies of the pages on sheets of paper. The production department then took over, typesetting the stories onto photographic paper, proofreading this against the original copy, doing the corrections and then pasting up the pages by following the page dummy provided by the subeditors.

With the arrival of new technology, the *Sun's* owners were willing to invest in direct input by the journalists. They did this not only because of the savings through the large number of production jobs eliminated – typesetters, proofreaders, and pasteup artists to begin with. But they also saw savings in time through casting out inefficient, labour intensive production methods.

There was also a third factor, but this was not spoken about. Swift computerisation removed the risk of the then powerful production department becoming unionised, something which was whispered to be in the air. If the production department were unionised before the new technology was introduced, the *Sun's* owners knew it would be more difficult and expensive to bring in.

The Sun jumped almost instantaneously to reporters writing their stories on computers, sub-editors editing stories and writing the headlines on computers, and then putting them together on the computer into modules for outputting. These modules were swiftly pasted up by a skeleton staff of layout artists, and pages sent off for platemaking.

But problems began to emerge.

Journalists readily took over most of the work previously done by pasteup artists. It gave the journalists much more control over the handling of the news, and they liked this. No longer were they dependent on others, or forced to operate under what they considered unreasonable deadlines imposed by the production department. But now, without an increase in their numbers, they also had added responsibility and pressure,

For, as well as their taking on the duties of doing typesetting and layout on the computer screen, the safety net provided by the typesetters and proofreaders was gone.

In theory, of course, the sub-editors always were the paper's last line of defence. But many mistakes were picked up and fixed by the typesetters, the proofreaders or the pasteup hands. Subeditors rushing to meet deadlines knew this and sometimes relied on it.

Many eyes made lighter work,

Now, once the sub-editor pushed the button on his or her computer and sent the stories away for outputting, there were no more extra eyes spotting mistakes that slipped through in the rush to deadline.

If a busy sub-editor missed a mistake, even an obvious typing error, it went into the paper.

The sub-editors now really were the paper's last line of defence, in addition to taking on all the added tasks of programming the typesetting, and doing layout modules on screen.

The pressure took its toll. Sub-editors called in sick more often. This was even though the management had taken care to ensure the newsroom lighting over the seating at the flickering new screens was what the ergonomic studies urged.

The Sun began missing its press time, which was critical because thousands of papers had to be trucked across to the other side of the island and delivered before dawn. This only intensified the pressure on the news department. As the stress grew, so did the errors.

The owners, having invested in the new technology on the understanding they would get savings anti improved efficiency, became concerned.

The problem was debated at length, both in the newsroom and in the boardroom. For the *Sun* was venturing where no one had gone before in Pacific Islands daily newspapers publishing.

The solution, eventually, was the obvious one. More sub-editors were employed, to take on the extra workload. The number of stories and tasks each sub-editor handled in a day was reduced.

The lesson was learnt in this case. But as computerisation and other new information technology grows, questions continue to emerge in the Pacific Islands, especially on the bigger newspapers:

- ★ Are editing standards declining because of the emphasis on computer skills, rather than editing skills? Are creative people in danger of being turned into technicians?
- ★ If editors don't devote considerable time to keeping up with technology are they in danger of losing power and influence to technocrats and systems managers?
- ★ Is local news suffering because stories from the international news agency now flow straight into computer systems of the papers, without need for re-keying, making them easy to place in the paper and get pages away? When the pressure is on which gets used, a local story which needs editing or a foreign story which has already been edited by the news agency?

These questions became academic at the *Sun*. It did not survive two military coups in Fiji. But out of its demise grew a new, totally locally owned daily paper, the *Daily Post*.

The challenges are many as computerisation and desktop publishing transform the Pacific Islands newspaper business. But so are the successes.

Now Here's an Example of a Success

The Cook Islands News, published on the capital island of the Cook Islands is a Pacific Islands success story. It is an example of how computerisation transformed a money-losing, inefficient government newspaper into a successful, growing independent daily newspaper effectively serving a small island developing state.

It also showed how the new technology could be harnessed to bring in news and photos from the outer islands, rather than just the main urban centre.

Cook Islands has a total population of just 17,000 people, spread over 15 islands scattered across more than two million square kilometres of sea.

Its national newspaper, *Cook Islands News*, began in 1944 as a cyclostyled government information sheet.

By the 1980s, it was being produced daily except Sunday, and still run by the government. It used mechanical means. It needed a heavy government subsidy to survive.

Journalists wrote their stories on typewriters and these were edited by hand before being passed to a typist. They were then typed into columns on an electric typewriter before being pasted on to pages by the layout artists.

Photos were screened using a process camera and then stripped into the page. The pages were then made into plates for printing.

In 1989, the government, as part of a policy of privatisation and corporation, sold the *Cook Islands News* by public tender. The winners were a group headed by the papers's editor, and two owners of a local desktop publishing company.

The desktop publishing company owners immediately began efforts to computerise the newspaper, to make it both more professional and profitable. They introduced personal computers, a scanner, and laser writers.

They opted for IBMs (ahead of the Apple Mac which is the system of choice for most Pacific Islands publications) because this is what the two of them were familiar with.

At first they used their own personal computers, and others they were able to lease. It had an immediate impact.

Advertising grew rapidly because of the improved appearance of the newspaper, and their ability to swiftly provide advertisers' artwork to their specifications. Revenue also grew through more efficient collection of advertising revenue through having access to a computerised accounting package.

So did news content. With more professional typesetting, 15 percent more text was able to be set in a page. The principals soon found more equipment was needed if the paper was to continue to grow.

Their efforts to develop a viable and profitable independent daily newspaper in one of the smaller nations of the world attracted the support of UNESCO.

Through a UNESCO project known as Pacjourn (Pacific Journalism Training and Development of the Print Media), they were able to upgrade their equipment and get training for their staff. By the end of 1990, they were operating a small Novell Entry Level System 11 network, with one computer for accounts, four for editors and reporters and two for layout and advertising.

The faster production of the paper which came with computerisation pushed back the printing time, from somewhere near midnight to eventually 9 pm, reducing labour costs. It also enabled the paper to switch from small US Letter size pages to a proper tabloid.

This fuelled further development of the paper, and soon more equipment -was needed if it was to continue to grow.

Help this time came through a UNESCO International Programme for the Development of Communication project called CINCOM (Cook Islands News Computerisation Project).

The project upgraded the network to a Novell 3.11 system. Twenty users, instead of eight, were now able to connect. Still video cameras replaced conventional film cameras, eliminating the need for time consuming and expensive darkroom developing. They enabled photo transmission via modem from other islands of the group.

For in a happy coincidence telecommunications services throughout the Pacific Islands were improving rapidly about the same time as the desktop publishing revolution arrived. Links via satellite replaced the radio telephone. At *CookIslands News*, two laptop computers also enabled reporters to file from other islands.

And an archiving system was set up.

Cook Islands News is an example to how the introduction of new technology, and proper use of it, helped :

1. transform a money-losing government newspaper into a viable independent national daily newspaper.
2. introduced still video photography to Pacific Islands newspapers, with all its implications for the instantaneous transmission of photos from outer islands to newsrooms in the capital cities.
3. setup the first electronic archival storage and retrieval system in the region covering all data published by the newspaper.

One of the main reasons for this success was the knowledge the new owners already had of desktop publishing, and their commitment to successful computerization.

And More Success

As this paper was being written, the success of *Cook Islands News* bred competition and the further growth of the country's newspaper industry. A former *Cook Islands News* journalist, using desktop publishing know-how he gained at the News, launched the country's first Sunday newspaper.

Newspaper Printing Technology In Cambodia A Country Survey

Mao Mayon *

Introduction

Cambodia has emerged to join the international mainstream after nearly two decades of civil war and isolation, which have damaged a large part of its infrastructure and put it behind the world by several years in terms of technology.

The printing and publishing industries are no exception. It was only about four years ago, in the year 1990, that computers were first introduced into the country. This has changed the small newspaper publishing industry in the country to some extent. But while new ideas and methods have been eagerly accepted by the printers and customers because they save time and improve quality, financial and structural problems have prevented their widespread use.

The newspaper printing industry in the country is in a very early stage of development. Most newspapers are still printed using old technology. Whether technology will improve in a big way in the coming years is closely tied to the fate of the newspaper industry as a whole, which is presently in a very young and uncertain state.

History

Before 1975, Cambodia had fewer than 10 newspapers all of which used the old letter press technology to manually print newspapers. The old system suffered a setback during 1975 to 1979, when the country suffered under the reign of the Khmer Rouge and their leader Pol Pot.

Newspaper publishing was completely stopped. Information was scarce and people who were forced to work in fields far away from their homes had little news even about the fate of their own families. There was absolutely no contact with the outside world.

After the regime was overthrown in January 1979, the new government began a slow recovery, and all media- radio, television, newspapers and a news agency, were slowly rebuilt. Printing technology was still mostly old and dilapidated. International isolation during this period meant the country was cut off from technological advances.

Therefore, the country started in the eighties with two newspapers in the Khmer language: the government newspaper called 'Kampuchea' and military newspaper called

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'Kangtoap'. Both were published twice a week and had a circulation of 5,000 to 8,000 copies. A 60-page monthly government bulletin was also published. No independent press existed.

There were only three printing houses in the country during the eighties, all in the capital Phnom Penh. The technology used was old: the letters were composed by hand, plates were made manually, and printing was possible only in black and white. The maximum printing speed of the machines used was 3,000 copies per hour and the paper had to be fed into the printing machine manually.

In 1988, two new automatic printing machines were acquired which improved the speed of newspaper publishing to 9,000 copies per hour. They were used by a new government newspaper 'Pracheachon' which had a print run of 15,000 copies per issue.

Computers became available in the country in 1990 and the manual system of composing letters was slowly replaced. But it was the arrival of the United Nations Transitional Authority in Cambodia (UNTAC) in 1991-93 which brought for the first time a free press, as well as more computers and new printing technology.

The Present Situation

At present, the printing situation has improved greatly since the last decade but is still greatly in need of improvement and expansion. There are now 10 printing houses in the capital Phnom Penh. But only four of these can service the needs of newspapers.

These four printing houses can print a maximum, of 60cm x 84cm (A1). which is the size of all Khmer language newspapers. Two of these four have automatic offset printing machines while the other two have mechanical offset machines.

Only one of these four printing houses has facilities for color separation. Therefore, when the demand is very high, color separation and printing is often done in Vietnam. Only one printing house has its own computer facilities.

A good illustration of the present situation would be my own printing house, called 'Pracheachon' (People). We are the only printers to have our own computer facilities, but we do not have color separation facilities and often have to send material to Vietnam. We can print only in black and white, with a maximum size of A1.

My printing house prints eight Khmer language newspapers, all of which publish twice a week. We also print one English Language daily and one French language paper which is published twice a week. This is the highest number of newspapers printed by any single printer in the country.

Most newspapers are unable to have their own printing facilities. Only one newspaper has a printing house attached to it.

There are no printing facilities in the provinces which are capable of printing newspapers. Since the newspaper industry itself is only about three years old, it is still at a very nascent stage. All the papers in the country are published and printed from the capital.

Problems Facing Printing Houses in Cambodia

At present, the problems faced in running a profitable printing business are immense. Printing technology is still mostly outdated and despite all the improvements in the last few years, modern technology is usually either unavailable or unaffordable and therefore not used by most printers.

The main reasons for this are:

- * New technology is expensive to acquire and needs to be updated constantly. Most printers are not in a position to make a big financial investment in technology.
- * Most of the labor in printing houses is either skilled in the old methods or completely unskilled. New technology also requires the use of skilled labor of which there is a big shortage in Cambodia. It is also too expensive to retrain the existing staff to acquire new skills.
- * Maintenance is difficult and a major cause of unnecessary expense. Most spare parts for new generation printing technology are unavailable in Cambodia and have to be bought from neighboring Thailand. The absence of skilled technical personnel means that often personnel have to be brought in temporarily from abroad for repairs.
- * Printing materials are expensive and are often not available in the local markets. They have to be imported from Vietnam or Thailand.
- * Electricity supply is erratic and is often unavailable for days at a stretch. There is a huge shortfall of electricity in the country as a whole. As a result, printers have to make a big investment in generators.
- * The biggest disincentive for newspaper printer and publishers is the small size of the market for newspapers. Cambodia has a population of just about nine million and a very low literacy rate of less than 50 percent. The annual per capita income of the population is about 200. Most people in the country are either unable to read or unable to buy newspapers regularly because incomes are very low.

During the presence of UNTAC, there were more than 20 newspapers in the country, but at present there are only 15 newspapers, most of which are running on heavy losses. Most of them can afford to publish only twice a week and have a circulation of 2,000 to 3,000. Many of the newspapers close down when the losses are too high and reopen when the situation improves. Therefore, printers cannot even be sure of regular print orders.

In this climate, printers have little incentive to make a big investment in new printing technology. Customers do often require high quality color printing, but their print orders are very small and they are also unable to pay high prices.

To give the example of my own printing house, we now earn most of our income from printing books, pamphlets, letterheads, cards and other documents. About 70 percent of our income is generated from these sources with newspaper publishing accounting for only 30 percent. This is despite the fact that we print more newspapers than any other printing house in the country.

Only two years earlier, during the time of UNTAC when there were more newspapers, 60 percent of our income was earned from newspaper publishing. We were printing 15 newspapers at the time.

At present, therefore, there is too little business to justify investment in new technology for newspaper publishing. But if the newspaper industry itself picks up as a whole, the future picture for printers could change for the better.

Another unique problem is the transition the country is making from a state-run communist/socialist-style economy to a free-market economy. Before the arrival of UNTAC and the election of the new government the country's economy was entirely state-run.

There were only two printing houses, including my own, which were owned and supported by the state. This meant that salaries, equipment, electricity and rent-free premises were provided by the government. But now printers have no such support and during this transitional period business is uncertain for both newspapers and publishers.

The situation for printers could improve after several years with more business and better infrastructure. But the improvement in newspaper publishing standards will depend largely on the fortunes of newspapers and the development of a large and sustainable newspaper industry in the next few years.

Information Technology and Newspaper Publishing in ASEAN Countries

Abdul Razak *

Introduction

Technology's effects are generally unpredictable, often negative, and are almost always changing the traditional ways of life. It acts as an agent of change on how people react and interact, and organise themselves to meet the challenges of competitive present and future.

The application of new information technology (IT) is inevitable for the economic survival of newspaper. Old typesetters, like the Linotype, which was developed by Ottmar Mergenthaler in 1886 and used widely are being phased out. Buying one is much costlier.

In my view, today, the pervasive use of IT brings with it both manifold blessings and curses, virtues and vices of technology,

It is defined as a concept and practical means for the acquisition, processing, storage, dissemination and retrieval of vocal, pictorial, textual and numerical information by means of computers and telecommunications to create, manipulate and distribute information for enlightenment and entertainment.

"We are moving into an age of the survival of the best informed and the developing countries dare not be left behind", cautioned an Indonesian scholar, the late Dr. Soedjatmoko. Information, which is increasingly important and relevant in almost all areas of human endeavour gives power to the best informed. The world is inundated -with information.

It opens much wider opportunities for electronic media, TV, rather than for print media.

This paper focuses on the general trends and impacts of IT on newspaper publishing and points out some of the questions, problems, pitfalls, considerations and calculations that need attention in facing future challenges affecting newspaper publishing and journalist work.

Media Scene

Murdoch phenomenon: News Corporation tycoon Rupert Murdoch wishes "to rule the world" as he hurtles his way down the information superhighway. While Coca Cola seeks

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to satisfy the world's craving for a sweet drink, Murdoch has been quenching people's thirst worldwide for knowledge and entertainment.

Murdoch wants News Corp to produce pictures, write words and own the technology which will deliver his dream into the homes of two-thirds of the earth's population, The 'Star TV' already reaches 53.7 million homes in Asia, which translates to 220 million people. (*Asia Business*, Dec. 1994, p.74)

China Daily reports that China bans foreign involvement in cable TV stations: Beijing forbids joint-ventures and cooperatives in the booming cable TV market.

Major American, European and Asian cable operators wish to enter China's growing TV market. Some 800 million people, two-thirds of China's population, watch TV, according to a survey by China Central Television (*AMCB*, May-June 1994).

China's publishing is booming along with the liberalisation of the national market. There are now 1,635 newspaper titles and 6,400 mostly technical magazines. But circulation of the official People's Daily has halved to three million copies.

According to the *Financial Times*, the total annual newspaper sales in China amount to 25.2 billion copies, a 20 percent increase over a 12-month period,

Chinese Television Network (CTN), somewhat like Ted Turner's Cable News Network (CNN), now broadcasts 24-hour news in Mandarin from its Hong Kong station. The owner, a Hong Kong-born business tycoon, expects to spend A\$ 40 million in two years. The CTN assigns reporters to report on business of Chinese communities in Asia.

Yonhap News agency is preparing to launch Korea's first cable television news service in 1995. Yonhap Television News (YTN) set up in September 1993, is expected to boost revenues and usher Korean society into the new telecommunications era.

YTN, a part of Korea's 27-channel cable TV network, employed 230 reporters, 350 correspondents and 20 overseas bureau when it commenced broadcasting early March. (*AMCB* Vo. 24. No. 6, 1994)

The NBC, the latest entrant into Asia's rapidly expanding satellite television industry, plans to open six Asia news bureau in 1995 to tap the region's growing appetite for financial news.

Japan will go into a digital high-definition TV in 1996. Japan Satellite System Co. will be setting up a joint venture for TV broadcast through 40 channels.

In Vietnam, ASEAN's new member, sees economic liberalisation producing a boom in newspaper and magazine publishing. But the government restricts advertising to 10 percent of the total number of pages and five percent of broadcast air time.

Financial Times of London, printed in Japan, is looking for a new Asian printing and distribution base, and adding a Hong Kong plan as the economic focus shifts towards China and Southeast Asian countries.

Australia's AAP Information Services, the Agency France Press (AFP), *Financial Times* of London, and Japan's Nihon Keizai Shimbun (Nikkei) recently launched a joint venture news service, AFX-Asia, based in Singapore, provides business and money news services to Asia-Pacific countries.

In Japan, people have more faith in what they read in newspapers than what they see on television. In a nationwide Yomiuri Shimbun survey of public perceptions of the print media, 90 percent of the people polled said that they felt newspaper reports could be trusted. Only 75 percent of the respondents considered TV news to be reliable. (AMCB V. 24, No. 6 1994). Despite the stiff competition from TV news reporting, Japanese newspapers continue to maintain their sober formats that emphasise the printed word. If this can be an indicator of the general trend, newspapers will stand firm against TV competition in news reporting.

Indonesia

In Indonesia, the big papers use the latest printing technologies and computerised news room to survive the fierce competition. Other newspapers look for a new strategy of survival. Some smaller papers have merged with the big media firms on a joint management scheme.

The press face hard competition from five private TV stations. Afternoon papers rush against time to complete with TV prime-time news broadcast.

Scramble for advertisement revenues is overheated. Last year, commercial TV's took 56.4 percent of the Rp 1.6 trillion (US\$ 740 million) ads expenditures. Newspapers earned 33.33 percent.

Newspapers and magazines can be efficiently produced by discarding manual pre-press printing processes according to Budhi Santoso, head of the printing firms association. But most of the 116 printing companies and 6,000 publishing firms still use old printing technology.

Newspaper publicity is "a very risky business" because of the rapid development of IT says, Herawati Dish, editor of the Observer (Jakarta). "We no longer can rely on subscribers or advertisements alone. We have to upgrade office equipment and facilities to survive in a competitive market. And, that needs huge capital," she adds.

Newsprint price hike is another headache for print media.

Large business groups and billionaires have entered into the media business, hoping to make it a "gold mine". The Bakrie Group, for example, has been reported investing US\$ 47.16 million in its media business of two dailies, one sport magazine, a private TV network. But observers caution of its negative effects on the press. Herawati stressed the importance of media keeping the mission to always report truth and articulate the aspirations and grievances of the 'voiceless' citizens. (*Jakarta Post*, Feb. 5, 1995)

The shift of non-media business tycoons to media industry worries concerned critics. "The era of idealist press or idealist journalists will never return. We cannot avoid change, though 'Media compete to publish exclusive (scoop) stories to boost circulations. This is the real trend of the local press today," Herawati adds.

Like in most of the world's liberal democracies, more media are now owned by large commercial houses or billionaire business magnates. It is in their interest that policies put forward are not detrimental to them. Since the journalist deals with controversial issues on which different groups in society could have different perceptions, the ownership of media by individuals and organisations with strong partisan interest could be detrimental to a free and uninhibited flow of news. (Peiris, *AMCB V. 24*. No. 4)

In Indonesia, media business is also a high political risk. The ministry of information can revoke a publication licence without recourse to court procedures. But that does not deter 'money-maker' investors.

Mochtar Lubis, a senior editor, summed up the general feelings that doubt the motive of business investors getting into the media industry. "They want to have a weapon to mould public opinion and protect their business interest whenever there are conflicts and controversies."

Journalistic idealism cannot be expected of them, says another observer, Eduard Depari. If they really want to serve public interest, they could easily set up a foundation and contribute wealth to public well being (*Warta Ekonomi* No. 10, August 1995)

The media-reach seems to be TV's strong bargain in the competition for advertisement. TV reach 60-70 percent (92 million viewers) of Indonesia's 185 million population, whereas radio stations reach out to 90 percent.

Indonesia has 263 print media, including 75 daily newspapers, 53 state-owned RBI radio stations, 625 private stations (Non-RRI), 12 state-owned TVRI stations and five private TV channels.

Some 10.5 million copies of newspapers (dailies and weeklies) are produced of which seven million are daily newspapers. Some 117 magazines turn out 5.13 million copies. The ratio of papers to readers now stands at 1:29, and for televisions 50 sets per 1,000 people.

Some 74 percent of advertisement money goes to commercial TVs, and the rest to newspapers and magazines, according to PPPI's Media Scene Indonesia survey.

While private TVs collect money from queuing up advertisers, the state owned TVRI grapples with its operation costs. The TVRI, which stays clear from commercials by its own policy decision, now relies mostly on fees from viewers and state budget allocations of Rp 135 billion (US\$ 60 million) a year. TVRI gets only 25 percent of whatever the private TVs earned from commercials. TVRI is reported to be loosing its traditional viewers and even broadcasters who have switched to the lively private TVs. And to maintain its mission as government media, TVRI spends US\$ 300,000 a year for news broadcast from international news suppliers and \$ 150,000 from international agencies.

The media industry employs 9,927 persons of which 7,000 are print media journalists.

Thailand

The *Bangkok Post* sells Postfax, an innovative technology that merged computer and facsimile technologies to provide a unique information service. Using an automated,

computer - controlled system to distribute information, Postfax displays product information instantly to customers 24 hours a day.

Another trend shows that Thailand is becoming a new force in regional printing. Some 2,500 Thai printers are poised to become a major Southeast Asian force, as duty on imported machinery was lowered to five percent from 20 percent and duty on imported paper was slashed from 35 per cent. These moves allow printers to compete for the first time with Hong Kong and Singapore. The printing industry made rapid strides in recent years as rising consumer spending triggered a surge in demand for newspapers, books and magazines.

Business Day, Thailand's first English language financial paper hit the newsstand in January 1995. The 20-page paper provides "a useful tool for those at the cutting edge of regional and global trade", and other concise business stories, in-depth analysis, factual information, balanced reporting for "people who don't have much time to read."

Malaysia

Malaysia's second private TV station has gone on air since February 1995. The operator, Metrovision Channel 8 City TV, is investing US\$ 19.7 million in the project. Channel 8 initially broadcast foreign programmes and local news. But it hopes to reach a 60 percent local content, which is required in its licence. Channel 8 expects to grab seven percent of the US\$ 553 million advertising market.

Information technology-related industry is growing by 19 percent annually in Malaysia's retail trade. There is room for further investments.

Singapore

Singapore magazines go paperless by using electronic forms of publishing.

The Information Technology Institute (ITI), along with two other firms, commercializes publishing technology for CD-ROM, and provides know-how to combine print, TV and radio material into a common format. Its partners supply editorial contents and support services.

The venture has produced a general 'infotainment' quarterly magazine called *Virtual World* since December 1993 with an initial production run of 25,000 copies.

Polytechnic's Multimedia Unit produces *Maga CD*, a quarterly magazine on CD-ROM, containing columns, features and programmes, targeted at students aged 15-22 years at a retail price of \$25.

Singapore printing industries are modernizing by developing a computer-integrated manufacturing (CIM) process to automate production planning and shopfloor control systems of local printing industry.

The process enables small firms to use automation and computerization at affordable prices. Currently there are 300 printing firms, most do not use modern manufacturing technologies.

Karaoke by Satellite

Singapore's Channel KTV, Asia's newest satellite TV broadcaster, will beam karaoke services in Mandarin and Cantonese languages into the living rooms across Asia in April 1995. Channel KTV (Singapore) Pte. Ltd. plans to broadcast to East Asia using the Apstar-1 satellite, and to the rest of the region using Apstar-2,

Currently there are several small karaoke channels available on cable systems in Taiwan and the Philippines. But none has attempted to deliver a regional 24-hour karaoke service via satellite.

Impact of Information Technology

From the trends as illustrated in the media scene, the issues boil down to the following:

- 1) Changes in communication technology will continue to alter the environment in which journalists and media work. But TV gets the greater edge.

The development of the 'information society' which promises everything, is in the hands of business interests. Many critics say they care little about public service needs.

The International Federation of Journalists (IFI) says that debate over new IT tends to focus more on the questions of technology and infrastructure rather than on public concerns over content and use of the technology. IFI sees a tendency among media employers to define journalism as primarily an economic activity.

- 2) Automation tends to create unemployment, Retraining of replaced workers will have to go along with the introduction of new information technology.

Strategies and programmes for training personnel should have priority to meet the need for continuous updating of knowledge in new applications, choice and transfer of technologies.

- 3) There is a pressure for opting expensive, modern equipment, which disfavors small and medium-sized newspapers.
- 4) There is a monopoly or oligopoly in technology transactions. Most of the IT softwares are developed and refined in the dominant Western markets.

Products and processes are designed by the technology suppliers, mostly in North America and Western Europe.

Newspaper organisations in developing countries have a weak bargaining position and lack of technical, legal and negotiating skills for evaluating the package offered. Evidence shows that technology patent holders are reluctant to pass on the knowledge to developing countries.

- 5) Information technology helps speedier news collection and more effective regional press services.

The acquisition of the technology is not a question of money. According to an ASEAN study of 1986, technology transfers deal with the crucial elements of 1) content of technology, 2) mode of its adoption 3) capability (resources, manpower and institutions) 4) milieu or environment in which actions take place.

- 6) Media have to equip themselves with IT that enable them to enhance their role of providing critical inputs (information) to sound understanding and policies affecting the general public.

Machines help make the processing of information, the critical input in development, faster and more efficient. But information has to be relevant and reliable. Quality of output depends on quality and adequacy of inputs. Quality decisions, on personal and public levels, depend on quality information.

Changes in Newspaper Production

Between now and year 2000 onward, newspapers will face significant changes, according to Rolf F. Rche, a newspaper designer and director of the Design Research International, Indianapolis. (*AMCB V. 21, No. 1 1991, AMIC*).

Important changes in print media affect the following areas:

Editorial Content

Newspapers are viewed more as information centres, not just publishing houses. Newspapers and magazines are specializing to meet needs of specific segments of readers, with more multiple sections, including sections within sections, with each section focussing on one type of theme or reader group.

In political reporting, newspapers use personal fax machines to conduct reader response polls on the day's important issues.

Personal communication with readers is given greater emphasis. Philippine journalists write column with writer's names and photographs on it. Page one sometimes print editor's column, summarizing significant news events.

Physical Appearance

Technology changes the way newspapers present information, employing more 'grab me' and 'friendlier' appeal to readers.

The front page presents a visual table of contents. Sections, in capsule form, give readers a quick overview of the day's events.

Newspapers hope to compete with television by colour coding of sections, a 'roadmap' to inside pages, more color photos, information graphics, shorter, easier-to-read news stories. Editors believe that today's readers seek a greater emphasis on graphics.

Page size becomes smaller, midway between the broadsheet and tabloid sizes of today.

Assumptions

The changes mentioned are based on the assumptions that:

- 1) The traditional readers were raised on print typography. The younger readers are raised on television, anti therefore expect shorter items and colourful graphics.
- 2) Colour photography represents reality, while a black-and-white shot is an abstraction.
- 3) Principles of good newspaper design, the packaging aspect are accorded high relevance.

Psychological and physiological studies in legibility apply to all newspapers. All readers, regardless of language or native land, read with a pair of biologically identical eyes. But no single desired look, can be adopted for all newspapers. A newspaper needs to have its own unique identity to reflect on what it stands for.

A newspaper can maintain a traditional identity if it can simultaneously give its readers information in a reader-friendly manner.

The design and editorial functions must work hand in hand, allowing the elements to complement rather compete with each other.

Information Explosion

The merger of computer, telecommunication and satellite communication technologies have been acclaimed as the cause of a world-wide information explosion. Information can traverse geographical and social boundaries.

Television 'invades' one's private rooms. Radio newscast beams globally. Tv reports events as they unfold, changing the traditional definition of news.

A newspaper can be printed economically in several countries by transmitting pages through satellite communication to a printing house away from the head office.

Desktop publication machines allow printing process to take place in an office or home. Personal communications centre will receive an electronic signal and give readers print-outs of a morning newspaper.

Laser-printing technologies allow printing daily newspapers at a high speed and in great quantities at a lower cost than using the expensive industrial technique of the 19th century.

Like Tv and radio, print media can turn their product into an electronic signal - a breakthrough in bringing news to consumers. The line between electronic and print media is rapidly breaking down.

Every day editors must sift through millions of words that flow into the computer throwing away two-thirds of them and then compressing and polishing the remaining into a finished newspaper.

Challenges to Print Media

New technologies and huge capital investments have created a television revolution. Along with it, the definition of news also changed from 'reporting what has happened (past tense) to what is happening (present tense) through live broadcast. CNN claims to report events as they unfold.

At least 35 international TV channels will be broadcasting to many countries by direct broadcast satellites. Programmes can be received by home-receiving dishes at a cheaper cost.

But print media will stay for the following reasons:

- 1) The wide use of computers has produced an explosion in the quantity of information.

The newspaper is a more efficient, more secure, more convenient way to store information and to share it.

Readers want readily portable and easily scannable information.

Information in print media can be reviewed at reader's own wish, time, and need. A newspaper gives readers an ultimate control for selection and pacing to the eye and yet a medium which is also truly communal.

Newspapers give a well-edited, selected package of information, which is the same wherever it is read. That gives readers a sense of sharing a world view with all other readers.

- 2) But there are economic obstacles for newspapers to overcome. No newspaper nowadays can survive mainly on readers' subscriptions.

Publishing is expensive. In Indonesia, a new newspaper or magazine should have at least a year's back-up budget to maintain survival.

Newspapers scramble for ad money in competition with commercial TV's which get most of it for reasons of visibility.

Newspapers need to address specific segments of society, and meet local nuances as part of the creative strategy.

The Western concepts of press freedom are not on the ascendancy worldwide. Censorship is an almost daily fact of life.

The answer is not adaptability to political sensitivities, but in the economies of scale. A newspaper should be able to be printed in more places than one and reach more readers. This solution is less vulnerable to the loss of market.

Survival will depend also on journalistic quality. The practice of quality journalism will be made more important and more difficult because of information explosion.

Challenges of Information Explosion

People in a modern society need information to control and understand the world and function effectively. A lively, responsible and realistic press can therefore make a meaningful contribution to the process.

But the information explosion has brought with it new challenges, making quality journalism more important and more difficult.

The reasons for these challenges are:

1. The assumption that more information will always mean more understanding and insight is not always true.

In reality, more information may also mean more misunderstanding, more noise, more clutter, more decisions based on brief superficial snapshots of events rather than thorough analysis.

2. People are drowned in an ocean of information.

Quantitative improvements in how people share information should be matched by quality improvements of information people share. People need information to form opinions and take decisions. Quality decision depends on quality information.

Challenges to Journalist

People need information in order to function effectively in modern society. But with the information explosion, newspapers need to address four qualitative challenges:

News Condensation

Today's newspapers compete for the money and time of busy readers, Readers expect of a newspaper the quality of compactness. Therefore, news has to be compressed and condensed, yet meaningful and comprehensive,

A newspaper will be judged more by its ability to help readers cope sensibly with the glut of information that confronts them.

Readers depend on the judgement of trustworthy experts as to how the bewildering array of information that is produced each day should be condensed and displayed in one manageable but responsible package.

Good editors must help readers to save time. This is one of their essential functions.

Visibility of News

Information must be presented efficiently, in ways that seize and hold people's attention. These are problems of impact and visibility. Only vivid and compelling communications can win the competition for people's attention. Advertisers pay more for the visibility and impact of their messages,

Media research, which tells how to reach the right audience, is no longer enough. It must be complemented by an equally sophisticated analysis of what happens once the message gets there. Is it visible to the reader? Or does it get lost? How well is it seen and remembered?

News Definition

The challenge has to do with the way journalists define news, especially when the audiences are no longer confined by geography.

News is traditionally defined as what is abnormal. News happens when the fabric of life is torn. The abnormal is taken for the normal. In the past, news was reported largely for homogeneous communities where more readers understood what was normal. Those days are gone.

Today we need a definition of news which emphasises more on what is normal, more emphasis on background and context.

Newspapers, in serving readers, need more journalists who can understand the complexity of events, discern what is different and interesting and truly consequential.

Specialisation

The communication revolution poses the challenge of specialisation.

A common reaction to the boom of proliferating information is for people to retreat into highly specialised corners where they can still feel some sense of mastery.

There they develop their own jargon, rituals, values and priorities, while the rest of the world goes its own way. This can be a rational way of handling complexity.

Specialisation is an important key to progress. But people will forget how to communicate across these specialities, from one discipline to another.

The major trend has been the rise of highly specialised, 'vertical' publications, which tell readers more and more about less and less.

Journalist must now learn to balance this trend with a new emphasis on general communication, on bridging the gulf between these specialised preserves and a wider public.

That's why general public newspapers nowadays employ more specialists, reporters with degrees in non-journalism area such as medicine, law, agriculture, economics, and people who are trained as scientists and linguists.

Newspaper management hope that these specialists can become good journalists, able to communicate about their disciplines to laymen who may not share their sophistication.

This is one of the central journalistic challenges to reconcile the growing trend toward specialisation with the growing fact of interdependence.

'The Why' of pluralistic and Independent Press ?

1. To enlighten the public

News flow affects the reader's sequences of thought, perception, and reaction which lead to formulating opinion and policies on which practical actions follow.

2. To advocate fairness and public interests.

Pluralistic and independent media should be concerned with giving voice to the 'powerless' and the 'voiceless' in society.

3. To set an agenda for public and government

Newspapers and journalists have the role to responsibly define social, economic and political issues that affect the livelihood of people,

One of the things that call for media help is to prevent 'big action' taken at the expense of the helpless majority or minority in society.

Newspapers define societal ills and bring them to the attention of those who are responsible and are in a position to remedy.

4. Big news media, supported by big money and interest groups will get too much leeway to control public opinion and influence public policy makings.

There is a need to have other media to balance and even dilute the formation of a monopoly of public opinion.

But small and medium-sized newspapers face problems of survival in terms of organisation and finance in fulfilling their roles.

Technology is expensive and needs big capital to startup and maintain higher operation costs.

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Computerisation and Automation of Newspaper Publishing in Pakistan

Owais Aslam Ali *

Introduction

Before discussing the state of information technology, (IT) in the newspaper industry, it may be useful to give a brief introduction to the press in Pakistan.

The Pakistani press is urban - based and reaches a relatively small segment of society. Over 70 percent of newspapers and magazines, accounting for almost the entire circulation of the national press, are published from the federal and provincial capitals. The bulk of newspaper circulation is controlled by four large newspaper groups - The National Press Trust (NPT), The Jang Group, The Herald Group and The Nawai-Waqt Group.

The Jang group is the largest newspaper group in Pakistan. The flagship publication of this group is the Urdu daily *Jang*, published from Karachi, Lahore, Rawalpindi, Quetta and London. *Jang* enjoys a virtual monopoly of Urdu readership in Sindh and Rawalpindi and has a major share of the market in Lahore and Quetta. Besides *Jang*, the group publishes *The News* from Karachi, Lahore, and Rawalpindi. *The News* was the first newspaper in Pakistan to use computers in all stages of production. Other publications of this group include the weekly *Akhbar-e-Jehan* and *Daily News*, an English language evening paper.

The other major group is Pakistan Herald publications, which publishes the daily Dawn. Until the 1980s, *Dawn* had a virtual monopoly of the English language readership in Karachi. Even today, despite competition from *The News* and other newspapers that are sent to Karachi from Lahore and Islamabad, *Dawn* has maintained its dominant position in the country. Recently *Dawn* started publishing a Lahore edition. Besides *Dawn*, the group also publishes two Gujrati papers, *Dawn Gujrati* and *Vatan*, and the English language evening paper *Star*.

The Nawai-Waqt group, publishes the Urdu daily *Nawai-Waqt* from Lahore, Rawalpindi, Multan and Karachi, and the English language daily *The National* from Lahore and Islamabad. This group also publishes the Urdu weekly *Family*.

The National Press Trust (NPT) was until this year owned and controlled by the government. However, last month the government sold the newspapers belonging to the NPT. These include the daily *Mashriq*, published from Lahore, Peshawar and Karachi, and

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Pakistan Times, published from Islamabad and Lahore. After the privatisation of the NPT there are no government-owned newspapers in Pakistan.

Besides these large groups, there are a number of other significant groups and independent publications. The Millat Group publishes the English evening paper *The Leader* and the Gujrati daily *Millat*. Among other important daily newspapers are *The FrontierPost* published from Peshawar and Lahore, *The Muslim* from Islamabad, and daily *Business Recorder*, *Amn*, *Qaumi Akhbar* and the recently launched *Financial Post* from Karachi.

English periodicals that enjoy wide readership include *The Friday Times* (weekly from Lahore), *Herald monthly* (Karachi), *Newsline* monthly (Karachi) and *Mag Weekly* (Karachi). Urdu periodicals with mass circulation include *Zindigi* (Lahore), *Takhir* (Karachi), *Urdu Digest* (Lahore) and *Quami Digest* (Lahore).

Pakistani newspapers suffer from low circulation, with the inevitable result that a large majority of newspapers are in a poor financial position. The main reason for the low circulation is the low literacy rate – about seventy percent of Pakistanis cannot read or write. Another reason is that newspapers are confined to large cities. Because of the absence of a regional or rural press that could highlight the concerns and problems of these areas, the potential readership in rural areas is largely unexploited. Other reasons for low circulation are the multiplicity of languages, fragmentation of readership and, until recently, government controls on the press.

Urdu newspapers account for over 90 percent of the total newspaper circulation in Pakistan. English language newspapers appeal to a small educated elite and command prestige and influence greater than their share of circulation. Among the regional languages, Sindhi is the only language with a well-developed press.

The media in Pakistan are served by two major news agencies – Associated Press of Pakistan (APP) and Pakistan Press International (PPI). APP is owned and controlled by the government while PPI is an independent news agency in the private sector. Because of lack of resources, Pakistani newspapers make extensive use of news agencies' services. Smaller newspapers rely on agency for almost all national and international news as they can not afford to employ reporters outside their cities.

Since the repeal of the draconian Press and Publication ordinance (PPO) in 1988, there has been a dramatic increase in the number of newspapers because the procedure for starting newspapers and magazines has been simplified. Major cities such as Karachi now have dozens of newspapers. A few new entrants have been very successful but a large majority of new publications have very little circulation and are barely surviving.

State of Computerisation

Rapid advances in computer and communication technologies have reinforced the effects of liberal attitude of successive governments towards the media and have led to the mushroom growth in the number of newspapers and magazines in Pakistan.

Over the last decade, tremendous advances in computer technology have been matched by dramatic decrease in the price of computers which have led to the rapid introduction

of computer technology in Pakistan. The government has contributed to the introduction of computers by not levying any duty on the import of computers.

An important milestone in the use of computers for the Pakistani press was the development of software for the Urdu, Sindhi and other regional language publications. In 1985, Pakistan's largest newspaper *Jang* became the first newspaper to introduce the 'Noori Nastaliq' system of Urdu script. This was a revolutionary development that enabled the development of computerised laser composing in Urdu newspapers. Since then a number of other scripts have been developed. However, the programme known as 'Shahkar' is most widely adopted by Urdu newspapers. The Sindhi language programme that is most popular among newspapers is called 'Al Nashi Al Maktab'.

The development of scripts in local languages has improved the economies of publishing newspapers. Now a few computer operators can do the job that once required an army of calligraphers. The savings in costs have been considerable. Computerised composing has also improved the presentation of news especially smaller publications that had to make do with less experienced calligraphers. Another benefit of clean standardised script has been that newspapers are able to get about 20 percent more matter into their newspapers. Many smaller newspapers have also started offering composing services on a commercial basis which has improved their financial position.

Despite the benefits, computerisation of newspapers in Pakistan in its early stages. A large majority of the publications use computers only for composing. A few publications use computers also for page making. At present journalists working for Urdu and Sindhi newspapers write their stories by hand which are then entered into computers by operators. There are only two newspapers *Dawn* and *The News*, both in English that have fully computerised their editorial operations.

The Jang Group has the most advanced equipment and operating systems of any news organisation in Pakistan. The group launched *The News* in 1991 using modern computer technology right from the start. Use of modern technology gave the news paper a definite advantage in the design of the paper. Use of colour, graphics and reader-friendly display of statistics are important factors for the popularity of *The News*. Another important advantage is that the paper has a late deadline and can use late-breaking news.

The News is published from Karachi, Lahore and Islamabad, and because of advanced communication the paper distributes the production of various pages to different stations. At *The News* and *Jang*, stories, articles, features and editorials feed into one terminal at any one of the stations can be accessed on terminals at all three cities. Pages that are shared among different editions are transmitted by *Image Broadcast* system through telephone lines.

While *The News* opted for a complete system right from the first day, its main competitor, *Dawn* has chosen to introduce computers in stages. It is only very recently that the editorial operations of this paper were fully computerised.

Daily *Jang*, the flagship of the Jang Group has also opted for a gradual introduction of computers. The paper is now in the process of training its journalists in the use of computers.

Jang will become the first Urdu newspaper where journalists use computers. *Jang* is also in the process of developing another version of Urdu software for the paper.

Among the major news agencies, the government-owned Associated Press of Pakistan (APP) computerised its operations last year after receiving a grant from the government, while the independent news agency Pakistan Press International (PPI) is currently in the process of computerizing.

Most publications have opted for either IBM PCs or Apple-Macintoshes, depending on the availability of acceptable software in their language of publication. Urdu newspapers have chosen to go with IBM or IBM compatible computers mainly because 'Shakhar' - the Urdu language software that has become the standard for Urdu newspapers - is not yet Apple compatible.

Most Sindhi newspapers have opted for the Apple-Macintosh based system mainly because the software that has become the industry standard has been designed for the Macintosh. All major Sindhi newspapers such as *Ibrat*, *bakhtawar*, *Awami*, *Awaz*, *Jaago* and *Hilal-E-Pakistan* have chosen Apple-Macintosh.

Among English newspapers the situation is mixed. The most technologically advanced newspapers. *The News* has selected the Apple-Macintosh. So have *Business Recorder*, *Financial Post* and *The Frontier Post*. English newspapers that have computerised with IBM or IBM-compatible computers include Pakistan's largest circulated English newspaper *Dawn*, *Muslim* and *The Nation*.

Impediments to Computerisation

Obstacles to rapid computerisation of newspaper publication include the following:

A. Lack of knowledge about computerisation While the hardware is now freely available in Pakistan at competitive prices, there is a lack of knowledge on designing and implementing computer systems. Since there are very few publications that have computerised their operations beyond composing and page making, there is very little specialised expertise on the computerisation of news organisations. Pakistani newspapers can benefit greatly if international media organisations such as UNESCO could assist Pakistani news organisations in designing systems for computerizing their operations.

B. Lack of funds for purchasing computers and hiring of technical staff: This is especially true for the medium sized concerns. Larger groups have the resources to modernise and computerise their operations, and the needs of very small publications are limited and can be met with simple systems and equipment. However, medium size organisations require fairly sophisticated systems that they cannot afford at present. In selecting projects for funding support, international media organisations should give priority to projects dealing with modernisation of operations.

C. Lack of proper training of staff: In most cases proper training is not given and the staff is expected to learn on the job after a very superficial demonstration of how the equipment and software work. This results in sub-optimal use of computer equipment. This is one area where Unesco and other international organisations can be of great help. There is a great need in Pakistan for training seminars and workshops in information technology.

D. Lack of adequate appreciation and awareness, and resistance to change and innovation: The use of computers for composing and page making did not significantly change the way of working in most news organisations. However, the introduction of computerised editorial systems requires a change in the style of working, which slows down the introduction of technology. This has been the case with some newspapers such as *Dawn*, which have opted to introduce technology at a pace that employees can feel comfortable with. Similar is the case with PPI where stand-alone PCs were installed last year to introduce sub-editors and reporters to computers.

Data Transmission

The most important advance in the field of news transmission over the last decade has been the introduction of facsimile machines all over Pakistan. Before the introduction of faxes, reporters, particularly in rural areas, had to depend on telex machines that were only available in major cities and towns. Telephones were an expensive and unsatisfactory method of news transmission. Now press clubs in many small towns and villages have installed fax machines for their members and many rural journalists also have personal faxes. This has led to a much better coverage of rural areas in the national press. However, beyond the introduction of faxes, Pakistan has been lagging behind in the field of digital data communication. Very little progress had been made until 1994, when the government formulated the data communication infrastructure policy. While it is far from perfect, the policy is a step in the right direction.

In Pakistan, access to Internet is not yet direct and live but through electronic mail. The main obstacle to full Internet connectivity has been the high cost for a dedicated data line to the U.S.A. However, the Federal Ministry of Science and Technology and two organisations, the Sustainable Development Network (SND) and Lahore University of Management Sciences (LUMS) are in the process of getting full Internet connectivity and are expected to have direct access before the end of 1995.

Since 1994, there has been a rapid development in the field of electronic communication. Many information service providers and BBS companies have entered the field. The government has issued licences to about 20 companies to operate data services and there are many more that are operating without government licence. Some of the important organisations involved in this field include:

Public Data Network (PDN) is owned and operated by the government-owned Pakistan Telecommunication Corporation (PTC), PDN charges a fixed monthly charge besides per byte charge. PDN provides connectivity to UUNET, CompuServe, and other International service providers. However, the system has not been functioning efficiently. It is too small and expensive to be of any help in improving the flow of information, PDN does not yet have E-mail services,

NARGIS (Network Accessed Regional and Global Information Services) is one of the oldest service providers with nodes in Karachi, Lahore and Islamabad. It is the largest network with about 500 accounts countrywide. NARGIS has a monthly charge and usage charge.

SDN (Sustainable Development Network (SDN), a United National Development Programme Project, has a dial-up link between Islamabad and New York exchanging messages three times a day. There are over 275 nodes feeding into SDN. SDN communication nodes are now available also in Karachi and Lahore and may be extended to other major cities by next year. SDN provides training and software needed to connect to the host.

Bulletin Board Services (BBS) have been established in Karachi, Lahore and Islamabad. The first BBS in Pakistan called 786 BBS was established in Karachi. There are around 75 active users of this BBS. Brain Computers, run the Brain BBS in Lahore and offer E-mail connections to the Internet. Computer Supermarket (CSM) and Compucraze are based in Islamabad.

A local mailing list called ISB-LIST has been established in Islamabad. The mailing list discusses Internet and other related issues with messages posted daily. The first Usenet group in Pakistan, called alt.talk.isb has been created and is very active. News feeds are available from SDN and other service providers. During the next few months many more BBS and service providers are expected to enter the market. With the expansion of telecommunications in Pakistan, the door is open for service providers who will offer faster and better service. Thus E-Mail in Pakistan will continue to grow substantially.

There are, however, formidable obstacles to the growth of computer networks in Pakistan. The biggest problem is that the quality of telephone service is very poor. Most telephone lines are analog but efforts are under way to replace them with digital lines. Government has allowed private companies to enter the field of mobile telephones and is in the process of privatisation of the government – controlled telecommunication corporation. These steps are expected to improve the quality of telephone service.

Another impediment to the growth of communication networks is the high domestic tariff rates. High domestic telecommunication charges distort market forces and hinder the development of information based service because it makes it very expensive to communicate and obtain information within the country. There is, therefore a need to overhaul PTC's domestic tariff structure.

The beginning of 1995 saw major newspapers entering the era of electronic publishing and information dissemination through Internet. Three English language papers, *Dawn*, *The News* and *Nation* send weekly or daily news summaries to E-mail subscribers. According to *Dawn*, their weekly news summary is being accessed by 35,000 readers. The Urdu language daily *Jang* and the independent news agency Pakistan Press International (PPI) also have plans to use the Internet for the dissemination of news.

With a large number of Pakistanis living in other countries, there is a great potential for electronic newspapers in the future. However, transmission of newspapers and news services started just a couple of months ago and it is not possible to predict the shape of things to come. Pakistani newspaper executives who have just taken their first unsteady steps on the information super highway admit that they may stumble once or twice, but stress that there is no going back.

Pakistan Press Foundation (PPF)

Fact Sheet 1995

Objectives

- ★ To help raise standards of journalism, particularly of the vernacular and rural press
- ★ To promote freedom of the press
- ★ To encourage research on mass communication in Pakistan
- ★ To promote, through the media, greater awareness of social and development issues

Activities

- ★ Training workshops for rural journalists
- ★ Seminars and workshops on issues in mass communication
- ★ Development of training material for journalists
- ★ Academic and scholarly research
- ★ News service to highlight threats to press freedom
- ★ Feature service on environment, sustainable development and social issues
- ★ Database and documentation centre on the media in Pakistan
- ★ Audio-video resource centre on environment and development

Areas of Interest

- ★ Mass communication
- ★ Culture and cultural pluralism
- ★ Education
- ★ Health
- ★ Environment and sustainable development
- ★ Communication industry
- ★ Human rights
- ★ Women and development
- ★ Narcotics
- ★ AIDS

Main Areas of Research

- ★ Flow of information
- ★ Freedom of the press
- ★ Development journalism
- ★ Mass communication training and education
- ★ Information technology

Selected Research Studies

- ★ Legal and economic framework of government-press relations in Pakistan
- ★ Pakistan's national news agencies: their evolution and operations
- ★ Development journalism - a critical examination of the concept
- ★ The availability and use of water resources in Pakistan

Research Projects in Progress

- ★ Annotated bibliography on mass communication in Pakistan

Publications

- ★ *Manual of Training for Journalists in Rural Areas* (in English and Urdu) by Fazal Qureshi, Edited by Owais Aslam Ali
- ★ *PPF Bulletin* (Quarterly)
- ★ *PPF NEWSFLASH* (Occasional)

Co-operation with other Institutions

- ★ The Panes Institute, London
- ★ Communication Assistance Foundation, The Hague
- ★ Developing Countries Farm Radio Network, Toronto
- ★ Press Foundation of Asia, Manila
- ★ Pakistan Press International, Karachi

Member

- ★ Commonwealth Press Union (CPU)
- ★ International Press Institute (IPI)
- ★ Commonwealth Journalists Association (CIA)
- ★ Asian Mass Communication Research and Information Centre (AMIC)

Year of Establishment	- 1967 (revived in 1992)
Type of Institution	- Non-governmental, non-profit oriented
Working Languages	- English and Urdu
Key Personnel	- Muazzam Ali, Chairman - Fazal Qureshi, Vice-Chairman - Absar Hussain Rizvi, Trustee - Owais Aslam Ali, Secretary General
Address	- Press Centre, Shabrah Kamal Ataturk Karachi, Pakistan
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Information Technology and Newspaper Publishing in India

K. S. Ramakrishnan *

Introduction

India has had a vibrant press for over a hundred and twenty years, both in English and in different vernacular languages.

Except for temporary aberrations now and then, Indian press has enjoyed a considerable measure of freedom of expression, comparable to what has been available to the press in western liberal democracies.

During the last 125 years, the mainstream Indian press has, by and large, kept abreast of, and also adopted, the most advanced contemporary technology relating to all departments of newspaper publication : collection and transmission of news and photographs, editing, composing, printing and distribution.

The newspaper scenario in India till 1970's

In tune with its continental proportions and multiplicity of linguistic groups, India has a large number of newspapers, in English as well as in a number of vernacular languages. (Among members of the Indian Newspaper Society, there are over 350 dailies.) The circulation of individual newspapers varies from a few hundreds to as many as 700,000.

Till the late 1970's newspapers in India, just as newspapers all over the world, were being printed on letter press machines. While the smallest among the newspapers were being printed on simple treadle machines, some medium sized newspapers were using sheet-fed machines. The mainstream newspapers were printed on high-speed letter-press rotary presses, their dimensions and speed varying with the respective circulation figures.

While some papers still adopted hand composing of copy - either because of their small size, or because neither mono nor lino machines had been developed for composition in some vernaculars - the medium and bigger newspapers, both in English and in vernaculars - were using hot-metal composition with either Monotype or Linotype machines.

During this period, almost all Indian newspapers were of broadsheet format, and there was hardly any tabloid.

* *Director, Research Institute for Newspaper Development, Madras.*

There was hardly any colour other than black and white in the newspapers, except an occasional spot colour on the masthead or in some advertisements.

Till 1970's almost every newspaper in India was being published from a single center. The bigger newspapers were being published from State capitals, and distributed in large geographical areas, using public transportation facilities such as trains and bus transport. This meant that outstation editions had to be printed the previous evening for catching the overnight trains, and only the city editions were being printed early in the morning.

Changes in the 1970's

The new technology, that replaced hot-metal composition with cold composition using computers, reached India in the late 1970's even while it was still in its nascent stages. The Indian newspaper industry, which could immediately discern the practical advantages in computer composition, was quite eager to adopt the new technology.

The snag, however, was that computer composition also demanded that the printing process be changed from letter press to offset. Many newspaper establishments could not afford to invest in new technologies both for composition and printing simultaneously. This was particularly true of bigger newspapers which needed to invest in double width, double-circumference printing presses of high speed in order to meet their circulation needs. The advantages in the new technology were only in the long term, and the additional investment would not give immediate returns in terms of either increased circulation or increased advertisement revenue. Moreover, the well-maintained letter press rotaries had useful lives of a few more decades but, once dismantled, could only be sold by weight !

Some big newspaper managements therefore adopted an interim technology of switching over to computer composition, but continuing to use the letter-press, rotary by using a photo-polymer plate. The photo-polymer plate, when exposed through a computer composed negative and washed with water, gave a raised surface wherever there were letters to be printed, and this plate could be used in place of a stereo and mounted on a letter-press rotary for conventional printing. The photo-polymer route was used by newspapers for 4 to 6 years till they were in a position to invest in offset rotaries.

This was also the period when some Indian companies had entered into collaboration with foreign firms for producing low speed offset machines (up to 20,000 copies per hour). Since these were not too expensive, many smaller newspapers found it possible to switch over to the new technology, both for composition and printing.

The entry of Apple Macintosh and plain-paper laser printer into India was another boon to many smaller papers, which could not afford the recurring cost of photographic materials that photo-composition needed. The Indian representative of Apple Macintosh was quick to develop the required software for composition in Indian vernacular languages. As a result, the smaller newspapers in vernaculars adopted the new technology, both for composition and printing, considerably ahead of many larger English language newspapers.

This was also the period when the technology of full-page facsimile transmission through telephone wires had been developed by some American and Japanese companies. The Hindu of Madras was one of the earliest newspapers in Asia to make use of this

technology to start a number of editions in other centres in order to reach to the readers in a much wider area copies printed early in the morning instead of during the previous evening.

The price of newsprint, which forms the single largest cost-component of a newspaper, had been continuously on the rise during this period. While ordering new offset presses, many Indian newspaper managements reduced the cut-off from the conventional 22.5 inches (in earlier letter press machines) to 21.5 inches or even 21 inches. The consequent saving in newsprint could itself substantially justify the new investment.

One positive feature of the switch-over to the new technology was that there was no retrenchment of former employees in any of the newspaper establishments. The existing employees were themselves retrained in the new technology. It was amazing, as well as heartening, that even employees above the age of 50 who had spent their entire lifetime on the old technology could learn and also adapt themselves to the new technology within a short period.

The Present Scenario

There is hardly any major newspaper in India that still relies on hot metal or hand composing and letter press printing. While proprietary systems (both hardware and software) had dominated the computer composition field in the late seventies and early and middle eighties, most newspapers use the PC or Macintosh platforms now, thereby enabling them to save cost as well as to have access to the latest developments both in hardware and software in these platforms.

Another concurrent development has been the vast improvement in the quality of telecommunication services in India, thanks to the switch over from the electro-mechanical exchanges to digital electronic exchanges in most parts of the country. This has enabled many newspapers to start multi-editions in different centres, each center catering to the readers in a small geographical area with editions, printed early in the morning. The full page facsimile transmission of hard copy has yielded, in many cases, to computer-to-computer transmission of composed pages.

News agencies have also switched over from teleprinter transmission to computer transmission.

Reporters pounding on lap-top computers and transmitting their stories to the head office through modems is still not a common sight in India, except in the case of reporting of events such as cricket matches. While this may become the vogue in the near future in the case of reporters of English newspapers, vernacular journalists are not likely to become addicts of laptop computers, because composition in vernaculars is relatively more difficult than in English.

Like in other parts of the world, introduction of computers in newspapers has resulted in journalists taking a greater and greater role in production functions of a newspaper. Compositors have become an endangered species in newspaper establishments, because reporters and sub-editors are themselves keying in their stories in a form that would finally get into newspaper pages. (This again, is more true of English newspapers than

vernaculars, because composition in vernacular languages is relatively more difficult, and may continue to need trained person for keying in copy for some more years). Computer pagination is also slowly gaining ground, thus adding one more production function to be performed by the editorial staff.

Switching over to offset has enabled newspaper publishers to offer four-colour printing to advertisers. Many newspapers have installed either satellite or stand-alone colour units for this purpose. While, initially, colour separation was done in graphic art bureaus, many newspapers have now installed highly sophisticated scanners for doing colour separation in-house. A spin-off from this development is that newspapers are in a position to print multi-colour pictures not only in advertisements, but also as part of editorial copy.

Future Scenario

There is no doubt that the leading Indian newspapers will continue to keep abreast of the latest technological improvements related to newspaper industry, and that their production standards will be on par with the best in the world.

With the increase in literacy and improvement in living standards, the circulation of both English and vernacular newspapers will continue to rise. The far-reaching changes in India's economic policies will result in a boost to their advertisement revenues enabling them to make the needed investments in the latest technology.

Seminar Recommendations

Agreed Principles

1. The rapidly widening opportunities provided by information technologies should be considered by all newspapers in Asia and the Pacific, particularly for news collection and preparation, pre-press processing and printing, newspaper management and retrieval, and innovative dissemination. Small newspapers and newspapers in newly pluralistic environments can especially benefit from these technologies.
2. Training and retraining of newspaper staff at all levels in the planning, implementation and use of information technologies should be organized as a priority at the enterprise, national sub-regional and regional levels; universities and technical training institutions concerned with communication and journalism should have adequate facilities (both coaching staff and equipment) to provide a solid background in information technologies to the new generation of newspaper staff, as well as for continuing education. Links should be established between educational institutions and employers and workers' organizations to ensure that professional training is relevant both to the foreseeable needs of the enterprises and to the long-term employability of media workers.
3. Information technologies promise substantial benefits for newspapers, their readers and their staff. However, possible negative social, cultural, economic and health effects on individuals, enterprises or the society at large should be carefully considered; in most cases, such negative effects can be foreseen and minimized by rigorously selecting and adapting technologies, and by carefully planning their introduction in human and organizational terms through information sharing and consultation among all parties concerned. Adequate fora to discuss these issues should be set up at the national and regional levels.
4. Professional cooperation should be strengthened at the national, regional and international levels in order to overcome the unequal access to information technology by newspapers within the region and within individual countries. Useful cooperation can also be developed between newspapers and vendors of software or equipment, either directly or through professional organizations, to facilitate training and exchange of information on information technologies.
5. Newspapers published in non-Latin scripts have in general been slower to be served by information technologies; sub-regional co-operation of countries using scripts of the same family should be encouraged to reduce this gap. In the same

vein, capacity for national and international data communication should be developed to accommodate all of the languages of the region:

6. Although the needs and possibilities for use of information technology will vary, the following applications are seen as particularly promising in the region :
 - use of electronic information channels, particularly the Internet, in accessing news and reference information;
 - integrated news flow support to facilitate both editorial work and pre-press production, as well as the archiving function;
 - databases designed to provide reference information and to support management functions;
 - appropriate printing technology to improve quality and reduce costs and wastage; new services, including both print anti non-print products.
7. Because reliable and affordable telecommunication is the key to the implementation of new technologies, media organizations should cooperate in advocating improvements in telecommunication infrastructure, increased competition among service providers, and regulatory reform.
8. The implications of information highways for newspaper publishing, and the role of the print media in the Information Society, should be carefully studied and discussed at the regional level. Aspects to be considered include :
 - models for electronic publishing including economic factors, intellectual property considerations, and possibilities of reaching the widest possible audience with technology-based products;
 - ways to make information about each nation's government, economy and culture accessible via new communication technologies for the benefit of media professionals as well as the society at large;
 - the media's need for open access to information from a variety of sources and the impact that technologies might have on press freedom.

Recommended Action

1. Conduct of a study by AMIC in collaboration with competent national institutions such as RIND and with UNESCO, on the feasibility and modalities of establishing a framework for co-operation among the newspapers and professional organizations in the region in the use of information technology.
2. Publication of guidelines on the use of information technologies in newspaper publishing.
3. Establishment of inventories and regional information exchange on :
 - training opportunities, including offers of in-house training in newspaper organizations;
 - information technology expertise within and outside the region;

experiences of newspapers in the use of information technology;
technical documentation and evaluations of particular technologies.

Newsletters and computer-mediated communication should be promoted as mechanisms for dissemination of this information.

4. Foundation of a professional body of media librarians in Asia and the Pacific to promote cooperation, professional development, and formulation/application of appropriate technical standards in this area.
5. Promotion of the sharing of technological facilities and expertise among the newspapers of the region.
6. Support for pilot projects on innovative use of information technologies by newspapers, e.g., on use of the Internet in journalism or appropriate technology for small newspapers.
7. Assistance for the development of adequate information technology tools supporting the use of Asian scripts for which such tools are not yet available.

Feedback Analysis

In the feedback analysis fifty percent of the responding participants, namely 13 out of 25, were fully aware of the objectives, while nine respondents felt that they were aware of the objectives only partially. In terms of expectations, 33 percent of the participants said that they were fully satisfied with the results and 60 percent were only partially satisfied with the results. Some were hoping to get technology aspects in greater depth. In terms of infrastructural facilities, all the respondents expressed their satisfaction.

On the subject coverage, all the participants found the treatment of subjects adequate, by session-wise structuring and duration of the course, While most of the participants stated that the seminar topics and presentations were useful, some of them felt that, although pre-press aspects of information technology, namely, data capturing and news-gathering were covered well, in-press, particularly the technology of newspaper production, was not covered adequately. They indicated that future seminars could be exclusively on the post-press aspects. On facilities like boarding, lodging and transport, 90 percent of the participants were fully satisfied and expressed their appreciation. There were complaints on transportation facilities within the city.

On the whole, the feedback from participants reveals timeliness, productive transactions and usefulness of the seminar. On the organisation of the seminar, the participants were highly expressive in their appreciation of the efficiency of the programme.

Valedictory Address

The Small Newspaper : Need to Preserve the Plurality of the Press.

S. Narendra *

In the industrialised world, computer networking is changing the way people live. Some 34 million Americans were working at home, according to a count taken in 1991.

We are talking of the great Desk Top Publishing revolution, whereas in the US people are already hooked on to DESK BOTTOM publishing. Some 1100 Science and Technical Journals are available on-line viz computers. A series of data bases available on very efficient computers and networks is now called DESK BOTTOM PUBLISHING.

Traveling to various places in India, meeting newspapers publishers, and seeing the way they are buying up the new technology has made me aware of a few things. The 'haves' of the publishing world are having more of IT. People of my generation knew of newspapers which were associated with only some places. 'Aaj' is a Hindi daily. The moment its name was mentioned, we, as students of journalism, associated the paper with Varnasi. But 'Aaj' is published from more places as a chain. What is the consequence? Smaller and medium level papers are being edged out. Advertisers find it more convenient to use chain papers as marketing vehicles.

The cover price of newspapers in this country is high. Buying a second paper or a journal is not easy for an ordinary person. Again, the local paper suffers as a result.

23 years ago, the President of the Republic, Dr. V.V. Giri, said that the country needs rural newspapers. I took up a study of over 100 papers published from rural areas to find out what they were all about. Uniformly they were imitating the big, metropolitan papers writing about the events in the national state capitals. Things have not changed. Where as the big chain newspapers are having exclusive sections for localised news/info, smaller publications have not developed a constituency of their own.

In 1993, we organised two workshops under the Indo-US Sub Commission on Media. The subject was how to produce and market community newspapers. It generated enormous interest as well as controversy. In the interest of the freedom of the Press it is essential to preserve the plurality of the Press, In this information age, everyone in the developing world speaks of the dangers of the transactional electronic networks. Personally, I feel there is a danger from the Business - Media complexes which are being formed. In one State capital five years ago I was taken to see a Hindi newspaper. Proudly the owner

* *Principal Information Officer, Press Information Bureau, Govt. of India.*

showed me a paperless editorial office. The newspaper had a very impressive circulation. But its News Bureau in Delhi just had one employee as a Correspondent. If the owner had a choice, perhaps, he will *run* an editor-less newspaper as well, IT has placed a powerful tool in the hands of the moneybags.

Today's stress is on colour, speed, display. A reader wants to see a TV in print and the publisher is capable of giving that product. The stress is on 'merchandising'. It is indeed a sad day when a newspaper is placed on sale alongwith a deodorant or talcum powder but it is happening. While marketing a newspaper as 'an information outlet' is a must to make it financially viable and independent, its mission as an information outlet should not be sidelined.

As a news service, I find another strange development. Reporters often do not visit the scene or interact personally with news sources. Often I am asked to fax, or a query is expected to be answered on phone. This poses a danger to both the news source and the reporter. Bob Woodward of Watergate fame – I do not know how far he would have succeeded if he had asked the 'Deep Throat' to fax him the information.

In India, IT is widening the disparities between the centre and the periphery. The newspaper scores over TV only when it relies on in-depth reporting – backgrounding. But barring the big papers, most newspapers today do not have access to such background information. Even if the service is available, many cannot afford the costs. For example, there are hundreds of Indian papers, with small circulations which cannot afford an agency subscription of \$ 150/- a month. Instead of individual newspapers coming up with data bases and backgrounders, newspaper federations need to come up with pooling arrangements and making them available to small/medium papers.

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