

Journalism in the age of multimedia

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JOURNALISM IN THE AGE OF MULTIMEDIA

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Abstract

Mass communication is on the threshold of revolutionary changes fueled by the new digital technology of multimedia. These changes will not only create new media forms and production modes, but will also produce entire new industries, new professions, and new markets. More than that, they will generate new approaches towards the fundamental concerns of creating knowledge, storing and retrieving information and communicating to mass audiences. This paper looks at the new direction mass communication will take in the 21st Century from some theoretical aspects. It will consider the impact of technology on information processing and communication, predicting that salient paradigms of communication theory in the next decade will be centred on the concepts of post-linearity, inter-textuality and information redundancy.

Introduction

Multimedia is already changing the craft of journalism and its products. In news offices throughout the world on-line data bases have revolutionised the way reporters access their raw material, leading to quantum gains in the breadth and depth of the information resources available to them, and a resultant increase in their work efficiency. Multimedia technology has also generated big changes in the way media products are generated and delivered. The number of major world newspapers and magazines that do not publish on-line editions is growing less and less every day. A newspaper can now be edited, designed and printed at different locations on different continents because multimedia technology allows the components of newspapers production to be moved across oceans faster than old fashioned copy boys could carry a subbed story from one end of a newsroom to the other.

The methods of TV and radio production are also being changed by digital-age technology. Recorders that convert visual and audio information into digital computer data have redefined the science of broadcasting, providing a platform for production processes that, apart from their promise of greater efficiency, offer the potential of communication media that will be infinitely more applicable for infinitely divergent audiences. Beyond the hardware of multimedia age technology are new ways of looking at communication, fresh approaches to finding new solutions to old problems. The emerging paradigms of human communication theory are predicated on the possibilities offered by digitised information rather than the conditions imposed by its predecessors.

Existing theories of mass communication reflect the production modes of the old technologies and the political economies of media industries created by those technologies. Because the arrival of digital media technology represents such a revolutionary change in approaches to mass communication they create the need for new theories to provide the framework for our understanding of how communication works and who it works for. These theories will inform the mass communication practices of the future. They will identify the core issues and problems in mass communication management, ownership, control, access, content, use and abuse.

Post-linearity

One of the most important theoretical concepts for the age of multimedia is the notion of post-linearity which refers to the technological overthrow of the limitations imposed by the old communication technologies that were limited to linear or sequential forms of information processing. Television, for example, relies on a linear structure for organising the information it delivers. The receiver accesses television messages by viewing narrative sequences that follow a trajectory through cumulative segments of information combined progressively to

provide an exposition of the subject. Books, and their mass media derivatives, newspapers, rely on an essentially linear system of structuring their information: the reader starts at the beginning and turns the pages towards the end (which is why the front page of most newspapers is reserved for the most important stories); or reads an article from the top and follows a linear path towards its conclusion. Indeed the dominant Western convention in news writing - the inverted pyramid structure of news stories - underpins a linear structure of news writing by emphasising this vertical hierarchy of facts.

Multimedia, however, changes the focus of access to information from the structure imposed by the producer to that chosen by the receiver. Multimedia products use a circular or fluid structure for the information they store and deliver. Access to their information is at any point. The subject is exploded into a mosaic of micro-subjects determined and navigated by the receiver. The expository path through multimedia information is sign-posted by the receiver's own interests and priorities, not the producer's predetermined idea of how the information should be "read". The concept of text, which has informed the development of mass media products since the emergence of mass communication, is thus challenged by multimedia's ability to create a new dimension for information storage and access.

The cinema and television industries are now experimenting with prototype post-linear products. Interactive dramas allow viewers to choose their preferred plot turns, to sideline disliked characters and to highlight others; to steer a course towards the denouement they find the most satisfying. These products still retain linear elements; a sequential narrative structure is still in evidence. However the authorial dominion over that narrative is now contested by the viewers who are being empowered to share creative control. This represents a fundamental change in the relationship between the producer and audience and diminishes the producer's ability to influence the way the viewer reads or understands the product.

On-line publications represent another step on the path towards a non-linear communication environment. The hard copy newspaper requires the reader to search for the information they wish to access. The usual way of doing this is to start turning the pages. A sports fan might start turning the pages from the back while a general news readers starts from the front, but the product still imposes a requirement for readers to take a linear approach to the task of accessing the newspaper's content. Once the reader finds the page they are looking for they must then search that page by scanning its articles until they find an item that interests them. And when they find a story they want to read they might then only want to read selected sentences which they identify by scanning the story from top to bottom. Thus, a significant part of the communication activity called reading a newspaper consists of scanning and browsing through unwanted information in order to access the information this is wanted. On-line publications liberate readers from this time-consuming and unproductive task. By using the subject, author, key word or other search tools that are normally linked to on-line publications readers can go directly to the information they want without having to roam through fields of unwanted verbiage. The linear frame that has virtually defined written communication for centuries is under challenge from a more efficient system.

Taken to its logical conclusion this means the death of most hard copy publications, even books, which is something that many people find hard to contemplate. Yet libraries of the future might well consist of a single shelf full of CD-ROMS and newspaper delivery infrastructure might be reduced to a few computers connected to the telephone system. On-line newspapers and magazine publishers are already developing products that can be tailored to individual readers: a newspaper reader who is not interested in financial news but intensely interested in foreign news might opt for a service that provides stripped down finance pages and longer versions of the day's foreign stories. On-line technology makes possible an infinite number of permutations of a single publication. The choice is with the reader.

Non-linear mass communication means receivers can zero in to the information they most want to receive and reduce their exposure to unwanted information. This alters the relationship between the sender and receiver. In terms of the power aspects of that relationship - the power to determine what information is disseminated to mass audiences and how - this might appear to tip the balance in favour of the receiver. Non-linear communication challenges the very concept of the mass audience, which is one of the foundation stones of post-industrial society. The possibilities for individual preference will force media providers to change their ideas about audiences and develop an awareness of the characteristics of smaller and smaller sub-groups within their audiences and markets. The implications of non-linear communication are huge for all parties involved in mass communication process. Advertisers will have to devise new strategies to locate their markets and to reach them with their messages: enticing readers of on-line publications to look at advertisements is a real challenge for the inventive capabilities of that profession. For the owners and controllers of media institutions, competition is likely to become more fierce. A significant structural change that will come in the wake of on-line publications is a reduction of print medium production and distribution costs. Printing presses, fleets of delivery trucks and other capital intensive requirements will be taken out of the production loop. Mass media consumers can expect better, cheaper products that will offer enhanced and more efficient access to the information their needs, tastes and interests demand.

Inter-textuality

The second theoretical issue that will become salient in the age of multimedia is the concept of inter-textuality, another revolutionary possibility created by multimedia. Inter-textuality, which describes information products combining different texts from different media, will provide media products that transcend existing boundaries of formats and genres. The CD-ROM, which will no doubt prove to be a crude forerunner of future multimedia standards, combines written text, still images, video and audio into one product. The existing product segmentation of media industries will be challenged by this new environment in which technology will no longer define the medium but will accommodate all media on a single multi-channel delivery vehicle.

The on-line publications described above may soon seek strategic allegiances with other communication media that are beginning to utilise the distribution and delivery vehicles offered by modem-linked computers. The internet can also carry audio files and a number of radio broadcasters - including the American Broadcasting Company (ABC) - have already launched real-time on-line news bulletins. The internet has the potential to deliver video files, although the memory demands of good quality digitised video make this impractical under existing computer standards. However on-line television may soon be possible, with the likely scenario being that its development will piggy back on improvements in video-on-demand delivery systems. Once all three mass media - print, radio and television - have spawned on-line derivatives then it will only be a matter of time before the three are combined on a single mass media product platform.

Multimedia CD-ROMS already provide a "hard-copy" of this platform, whose relationship with the on-line multimedia products currently in development could be likened to the relationship between books and newspapers. It's an interesting phenomenon that many new purchasers of CD-ROM drives are initially disappointed with their acquisition. They point out that the four media products that CD-ROMS combine - written text, still images, moving images and audio - all seem to be inferior versions of the products they imitate - books and periodicals; photographs and pictures, film and video; and recorded music and broadcast speech. They argue that it is just as easy to look up written information in a well-indexed book, that CD-ROM video looks so bad it is hardly worth watching and that CD-ROM audio

speech and music clips are too short to be of much use. They feel the product fails to deliver its promise of a one-stop media and information package.

CD-ROMS may not match the quality of the products they mimic, but what makes them remarkable is that they are able to combine these original products, which are all dependent on very different technologies, into a single unit requiring only one technological platform. If we extract the contents of a CD-ROM and convert them back into their original products we have a book and/or periodical (or several of them), a video tape and an audio tape (or CD). We need at least two different machines to access these items and it is difficult to operate these machines simultaneously. A CD-ROM runs in one machine which allows us to access all the CD-ROM's component media at once.

Negative reactions to CD-ROMS seem to reflect a reluctance to abandon the territorial divisions imposed by the textual separation of old media forms. CD-ROM critics often express their opposition to the new technology by stating that if they want visual information or entertainment they would rather switch on the television or go the cinema; if they want audio information or entertainment they would prefer to listen to the radio, play a recording on their hi-fi or go to a concert; if they want to read something they would rather pick up a book. This reaction asserts a preference for information and entertainment channels that are defined by the way they differ from other channels. It also reflects a way of looking at mass communication that separates its different channels from each other and imposes different functions and reception parameters on those different channels. For example, most of us allocate different times and contexts for our use of different media products. Maybe we prefer to listen to the radio in the morning, over breakfast, and while we commute to and from work, in the car. We might watch television in the evening and read a book in bed before we go to sleep. Sight dependent media - written texts and visual images - require a more focused mode of reception than audio media, and this has a bearing on where and when we can receive them. However most of us tend to develop patterns of media reception - which are largely culturally determined - that designate different media for different situations.

The inter-textual media of the future will require changes in our habits of media consumption. When the news organisations of the next century begin to provide one-stop on-line multimedia products, the old reception divisions between print, audio and visual will begin to disappear. What will then develop is a new consciousness among media consumers of the products available to them and how they can be used. They will begin to see and understand media products as inter-textual; the distinction between the written, the spoken and the visual will be blurred in the interwoven frames of multimedia. They will become less aware that multimedia products have these different components, as their memory of the old media forms begins to fade. Their conception of media products and media use will change as they grow familiar with the new products. The word "multimedia" itself will become redundant as people cease to regard it as a bundle or flux of different media and begin to see it as one medium.

Information redundancy

A third theoretical concept that will become important in the age of multimedia is information redundancy which refers to an excess or overload of information creating problems for information consumers and a need for strategies to maintain optimum information access. Information redundancy can be seen as an unpleasant side effect of the digital revolution. Digitised technology has created such a vast capacity for information storage and delivery that the efficiency of the system is threatened by the sheer weight of its output. This problem is termed information redundancy because most available information is redundant or useless to any individual consumer at any one time. Interestingly, the word redundancy is used in computer jargon to describe one of the technical processes for compressing data files.

Digitised video files are compressed by a system that identifies redundant segments of information - digitally encoded pixels - and deletes them from the file. Each video frame is compressed by removing alternative pixels of the same or similar colour values so that the amount of information needed to visually reconstruct the frame is reduced by half or more. The result is not the same quality as the original uncompressed frame but it is a good approximation of the original that avoids the memory problems associated with uncompressed video. The principal is that a certain amount of information is redundant and needs to be removed to improve use and access efficiency.

Similarly, information redundancy refers to information that uses too much memory or storage capacity to the extent that it impedes the efficient utilisation of those storage banks. It does this by creating blockage points that slow the traffic flow of information transfer and by complicating the process of sign-posting and navigating the highways of information retrieval. The more information available in a given domain or subject area the greater the need for a network of pathways to guide inquirers to the exact location of the specific information they seek. Media consumers can easily become bewildered by the ever-increasing range of new products available to them. As the suppliers of media products define their markets more and more narrowly, there are more products launched to fill newly identified niches. The problem for consumers is one of exercising choice and preference in a situation where the range of available products is constantly growing wider. The difficulty is picking the right product for their tastes and needs. It's a problem for individual consumers, for corporations and organisations, even for governments.

Media producers will soon have to face up to the negative implications of the explosion of information availability. Their main concern will be penetrating this mist of over-abundance to get their products to their target audiences. The path to the consumer's door will grow longer, windier and more obstructed. For consumers the problem of information redundancy will generate new approaches towards using media products. The emphasis will shift from the general to the specific as they develop the navigation skills needed to pinpoint the products that match their priorities. Mass communication consumption will reflect the increasing specialisation of professions and functions and will place increasing emphasis on avoiding the wrong information while finding the right information. These changes will foster new ways of understanding mass communication and new attitudes towards the relationship between media producers and media consumers.

Conclusion

The implications for journalists of these revolutionary changes in media products and in the public perception of their social function cuts across broad areas of their professional practice. Multimedia may eventually lead to a dominant new media product that will push its predecessors out to the margins of the industry. The non-linear access mode of this new information delivery platform will reduce journalists' ability to control the way audiences read the texts they produce. The problem of information redundancy will force journalists to be more aware of their markets and to give a higher priority to maintaining close contacts with their markets. The profession of journalism will change just as radically as its products and audiences change. And at the core of these changes will be new ways of understanding and defining the relationship between journalists and their public.