

[Jakob Nielsen's](#) Alertbox for August 23, 1998:

# The End of Legacy Media (Newspapers, Magazines, Books, TV Networks)

Most **current media formats will die** and be replaced with an integrated Web medium in **five to ten years**.

Legacy media cannot survive because the **current [media landscape is an artifact of the underlying hardware technology](#)**. Whenever the user experience is dictated by hardware limitations, it is a sure bet that something better will come along once these limitations are lifted.

Why are traditional media separate? Why do you have to chose between either

- seeing moving images of an event on TV
- reading the full story in the newspaper
- reading a reflective analysis of the underlying issues in a magazine

Why not all three in a single medium? And why not link the coverage to archival information from an encyclopedia, an atlas, biographies of the people involved, historical novels that bring the relevant countries' past to life, and many more books?

The answer is obvious: You can't screen a film clip in print, you can't broadcast a long article on television, the newspaper presses don't wait for weeks' worth of research for the reflective story, and it would be too expensive to send magazine subscribers a small library of books just in case they wanted deeper background information.

In other words, **current hardware prevents true media integration**. Even so, there have been attempts: Newspapers often include a Sunday magazine and the better ones assign reporters to work for long periods of time to research and write extensive background articles that go far beyond yesterday's news. Sometimes books are rushed to print to cash in on public interest in a high-profile event.

## Higher Bandwidth Allows Integrated Media

The Internet has its own hardware limitations that limit integrated media services:

- **Limited bandwidth** makes video impossible and reduces the amount of graphics, animation, and other non-text formats that can be used. Also, **slow response times** reduce the depth and richness of services since users do not follow hypertext links freely unless they get sub-second response times.
- **Low-resolution computer monitors** make users read 25% more slowly from screens than from print, leading to a need for fewer words on the pages.
- **Poorly designed Web browsers** and search engines reduce users' ability to navigate the Web and find the information and services they need. (This last item is a software issue, not a hardware issue, but from a content provider's perspective, all that really matters is that the infrastructure is still insufficient to build advanced Internet services.)

These problems will go away over the next 5-10 years. Users get [50% faster Internet bandwidth every year](#). In five years, high-end users will have the required sub-second response times to navigate the Web freely. In ten years, all users will have good bandwidth. Also, in ten years, it will be possible to stream good quality video across the Internet (current postage stamp videos are close to useless).

High-resolution monitors with 300 dpi graphics exist and have the same readability as paper. Monitors probably won't drop in price at the speed of Moore's Law, but I still predict that high-end users will have good screens in five years (maybe 200 dpi) and that all users will have good screens in ten years.

This means that around **2008, all computer users will prefer using the Web over reading printed pages**. High-end users may make this switch around 2003. Once the Internet is as pleasant to use as old media, it will win if it provides services that take advantages of the interaction and integration offered by the new media.

Distributing high-quality video over the Internet does not mean that television networks will simply go online. There is no reason that Star Trek and the evening news should come over the same channel or from the same company. The only reason this is done now, is that both shows have to share the same broadcast frequency. It would be a much better solution to integrate video clips of news with text coverage of the same news and to link both to background analysis and educational resources.

Most of the **video clips in these integrated services will be very brief** since users want to retain control of the interaction and set the pace of their information consumption. Current CD-ROM encyclopedias are a good role model: even though they do have more bandwidth than the Web, CD-ROMs usually limit their video clips to 30 seconds. Much longer and users get bored and want to get back to *interacting*. Also, the videos have to be tied into the rest of the service and integrated with text, image databases, computer animations under user control, and much more. "[Multimedia](#)" means *many* data types, not simply getting linear television on a computer screen.

In addition to the short, integrated [video clips](#), there will also be longer videos available over the Internet. Movies and one-hour productions will remain popular for fiction, because storytelling often works best in a linear format where the user abandons responsibility and simply absorbs the plot as envisioned by the author. Even these linear productions will be distributed over the Internet: why should a show start at 9:00 if you are ready for it at 8:50? Video-on-demand will require better user interfaces than currently known (people won't suffer through reading a manual to watch a game show), but we do have at least five years in which to invent these designs before the Internet is fast enough to replace television networks.

Even though integrated video has to wait for higher bandwidth, it is possible to **integrate text-only (or text-plus-photos) publishing formats today**. Services can integrate the spectrum from immediate news over background analysis to archival information. The *Wall Street Journal's* integration of company handbook information with the ability to retrieve old articles about the same companies results in an online service that is more valuable than either feature alone - and much more valuable than any single day's news.

## Death of the Media, Not the People

Even though I predict the death of legacy media formats, I think that most of the **people working in these media have a glorious future**. There will continue to be a need for writers, editors, photographers, camerapeople, video producers, on-screen talent and actors, and many others. In fact, the demand for talented media specialists may grow if interactive content gets to play a more important role in people's everyday lives. I believe this may easily happen since interactive media are more engaging than passive ones.

Current media workers will need to **modify their skills for the interactive age**. For example, people [read differently online](#), so writers need to change their writing style. Similarly, a photographer must learn to shoot in ways that allow users to

interact with the photo (for example, click on objects to have them explained).

I am less optimistic about the future for current media *companies* than I am about the future prospects for their *staff*. In principle, media companies could leverage their current staff, skills, brand, financial resources, and audience relationships into the interactive age. In practice, many of them are tied into their traditional media format and not sufficiently willing to consider it expendable. How many newspaper publishers are willing to treat their print product as a cash cow that is planned to survive no more than ten years? How many fund their website to become an online service in its own right and not simply a set of repurposed print articles and newswires?

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See [reader comments](#) on this Alertbox: need for tablet computers, survival of radio and linear storytelling.

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September 6, 1998: [Microcontent](#): How to write headlines and subject lines

See Also: List of [other Alertbox columns](#)