

Keynote Address — Advanced Television and Electronic Imaging Conference, Chicago, Ill. February 3-5, 1994

By David L. George, SMPTE Editorial Vice-President

It is time, once again, to take the pulse of our rapidly changing motion-imaging industry — and what better place to do it than here in Chicago.

For many years the purpose of this conference was to deal with the swiftly evolving technology of just one narrowly defined medium, that of broadcast television. However, for many good reasons, we can no longer afford such a constrained focus in what has become a vast arena of contemporary approaches to motion imaging. The program for this conference reflects some of that change, as it attempts to review and report on the effectiveness of several of the new medicines that new medicine men have prescribed to make it even bigger and better.

Yesterday's tutorial provided us with additional insight, observation, and diagnostic information on one of the key panaceas of the 1990s — Digital Video Compression. But there are many other change and growth remedies proposed, and we will hear about several of those as well, here in Chicago.

We are in Chicago because the Chicago Section of the Society has demonstrated, time and time again, that it has both the interest and competency to pull together the presenters and resources necessary to mount a superior Winter Conference to report on the vital signs of this industry, and to offer opinions as to the effectiveness of several of the technological medicines that have been proposed to ensure its continued relevance and success.

Under the direction of General Arrangements Chair Don Adydan



Editorial Vice-President David George delivering the opening address.

and his fine committee, Program Co-Chairs Jim Pianowski and Steve Robinson have developed a comprehensive program to explore some of these new technologies. With the support of several suppliers (for which we are thankful), they have brought together a number of knowledgeable industry professionals to share with us their insights into these new sciences and their applications.

This is an important conference because it is common, when dealing with new technologies such as these, to overestimate the immediate and underestimate the longer-term impact they will have. And I don't mean only the changes they engender, or permit, in the way we can apply or manipulate our science. It goes much deeper than that. The structural changes that new technologies bring about, over time, are often not even foreseen, let alone fully appreciated, until the technologies themselves are a well-established fact of everyday life. And, as this conference reflects, and to a certain extent explores, new

technologies often have both unanticipated consequences and strange and unexpected evolutionary paths. New technologies require constant monitoring, and that monitoring must often be in new areas too — areas that were not previously directly impacted by those technologies.

In that sense, there is a general belief that suggests that, in times of technological progress, the broad movement of history is upwards; we come to believe that what is bound to happen in the future is also bound to be good. Stated another way, the widespread belief is that technological development contributes, generally, to the betterment of the human condition and to our quality of life.

The impact of technology is, and has been, greatest in the area of transportation and communications, which are really two sides of the same coin, separated in the middle largely by the passage of time — especially in an information age when much of the "freight" of yesterday has become the "data" of today. The building of the great railways of the past and laying the groundwork for the coming of the broadband electronic highways of today have much in common, both in economic and social terms.

With regard to our own few pixels within this bigger picture, we should be especially concerned with the character of the structural changes that will take place in our now virtually unlimited imaging universe as a result of the changes we will be discussing here, and the longer-term impact this will have on how, and by what means, we will communicate with, inform, and entertain each other.

Socially, communication futurists like Marshall McLuhan have long argued that electronic technology, in particular, is reshaping and restructuring

Text of keynote speech presented on February 4, 1994, at the 1994 SMPTE Advanced Television and Electronic Conference in Chicago, Ill. SMPTE Editorial Vice-President David L. George is with Imagineering Ltd., Toronto, Ont., Canada M3C 3E9.



The technical sessions drew an audience of more than 200 people.

turing existing patterns of social interdependence, and that the technologies of the electronic media play a strong and central role in the remolding of our society. He argues that societies are shaped more by the nature of media, which is really determined by the technology used by the electronic media, than by the content of communication. He holds that a knowledge of how media works is necessary in order to understand social and cultural change.

In a world that is changing as fast as this one is (a trend that appears to be exponential, if McLuhan is even half right), it is important for us to come to know the technologies that are driving change, if we are to hope to gain an understanding of the social and structural changes that can and will take place and be able to recognize and adjust to them as they occur. And we should keep in mind that technology not only plays a central role in societal change; it also defines in what direction and to what extent change is even possible.

This is because technology establishes the envelope in which change can be made. In our case, it sets the

limits and defines the extent to which media messages may be developed and delivered and thus controls much of what can be said, and how. The envelope is continually moving along the three axes of time, discovery, and application. It is ever-expanding and, though some parts are being discarded (largely older, inefficient, or ineffective technologies), the realm of possibilities it contains is rapidly expanding, if not exploding, into the swiftly increasing volume created by the ever-expanding corners that are being pushed ever outwards by new discoveries and their application, spawning new technologies for media.

As we have seen, new technologies, particularly new media technologies like some of those we will be discussing at this conference, impact directly on society. If their impact is significant, their positive and negative effects will likely require some kind of focusing, through some form of public policy action or direction. The point is that, if structural change is not brought about directly by the technology itself, it likely will be by the public

policy response developed to harness, control, and direct it.

Regulatory changes and the new technologies that caused them, for example, are paving the way for new broadband communications networks that have the power to deliver all of the information and entertainment we now believe we could possibly ever want. What effect will this have on existing programming and distribution channels? It's a case of technology push as far as public policy is concerned.

We already know that international borders are no longer what they once were. Policies and policy outcomes like common currencies, free-trade agreements, multinational companies, world markets, international air travel, instantaneous worldwide communication, and even CNN contribute to the fading, in most places, of the concept that once was nationalism and to the loss of national control over ideology, over national identity, over culture, over borders, and especially over the information and ideas that cross over them. The technologies of media underlie very many of these changes and have had

much to do with the rate at which they came about, and about building the kind of world in which we now live.

Well-known, well-established, older media technologies led that surge of societal change. The technological underpinnings of what might well be the next wave are the subject of this conference. Now, at this point in time, and in our current technological envelope, *digital* and *compression* have become two of the most powerful words in the entire media language.

Digital is key. Digital holds the key to many of the various "abilities" we have come to seek to improve the efficiency and effectiveness of our capability to communicate: such abilities as scalability, interoperability, extensibility, extendability, and the like. Will this change society through providing an enhanced means of exchanging ideas among a wider, and often new, audience? The answer is yes.

Digital holds the key to compression too. And compression is the key to the provision of a multitude of potential new, different, and maybe even better media services. Compression promises a virtually unlimited program universe in which individuals can choose what they want from an electronic catalog of available services. Each person can then make his or her own choice as to content, means of delivery, and time of presentation. And each can decide how much to spend on media services, both individually and overall. Real free-market conditions will apply, unconstrained by the technical insufficiency to provide adequate choice. Will this change the way we interact as a society? Again, the answer is yes — as a minimum it will contribute to a greater awareness of autonomy and less of a sense of community among us.

Digital also holds the key to technological convergence, not only of the new and established media such as film, television (in all its various forms), and new computer-based media, but also of the means of distribution.

The focus on distribution, another result of technical convergence, has created a battle for control over the distribution system and gateways for information and entertainment into

the home (and for control of data out of the home too, whether that's something we want or not, and something else that may soon attract policy). Nevertheless, the symptoms of impending structural and social change are clearly evident; look at who's involved. The competing big players, almost nation-states themselves in size, include the traditional large players — the studios, networks, cable systems, and telephone companies. But also, technological convergence means that new, nontraditional players, such as large manufacturers, computer and software companies, by themselves or in combination with one another, are also seeking a larger slice of the inviting "infotainment" media pie.

You can see the battle over converging turf raging on the business pages of your daily newspaper right now: Paramount, Viacom, QTV, and allied players; Bell Atlantic and TCI; Times-Warner, Scientific-Atlanta and SGI; and a host of other contenders with recognizable household names, positioning themselves for a significant place in a new media world order.

Will this change the way we live? You betcha. If you want to know how, look first to the nature of the technologies that are involved.

Yes, there are still lots of problems to be solved. In distribution LANs and WANs are, by and large, still too slow, even for meaningful quantities of the kind of data transfer rates we are talking about, but techniques like ATM, with input from people like ourselves, just might provide an answer. Broadband digital networks are becoming feasible, even into the home if entertainment services are also permitted to help pay the way. We are not quite there yet. There is still progress to be made, and there is still an important role for us to play, but the technical building blocks of a new delivery structure are already rapidly falling into place.

In terms of messages, where will the creative and productive capacity to fill all these new distribution channels come from? Are there are a lot of stories still untold, and sights unseen? I believe the answer is yes. What mechanism will determine what is offered? Will it be a balancing of the cost of production against the risk inherent in attracting view-

ers? And what will determine what is watched? Will it be how well a program is promoted, more than any quality or feature of the program itself? Answers to questions like these, formulated from the dominion of the technically possible, of which we form a part, will shape what we see and hear and that, in turn, will influence who we think we are and what we might become.

The answers are not obvious, but if we change the messages and how they are created, and if we change the way we present the messages, the number and quality of the messages we present, how we distribute them and who selects what we are exposed to, surely we will have massively changed the underlying social, technical, and economic structure of our industry. And because the electronic media, in particular, has such an impact on society, a massive change in its underlying technology will have a corresponding significant impact on society as we know it.

What it boils down to is that understanding the changes in media technology is the "Rosetta Stone" to understanding the changes in society that will result. Technology establishes the limits of the envelope in which the realm of possibility is contained; it describes what is possible and, equally importantly for us, what is not.

This conference is about some of these technologies and their progress. As such it is both a timely and important conference that provides a picture of where some of the more important underlying technologies have been and suggests where they may be going. If we must know what they represent, in terms of media, in order to understand media's effects on the reengineering of our society, then this conference is too important to miss.

I'm happy to see that those of you here agree with me, and I trust that you will come away from this conference better informed and more appreciative of the changes that are happening all around us, made more aware as a result of the efforts of the SMPTE and Messrs. Adydan, Pianowski, and Robinson at this winter conference in Chicago.

Thank you.