Industrie Canada   Industry Canada
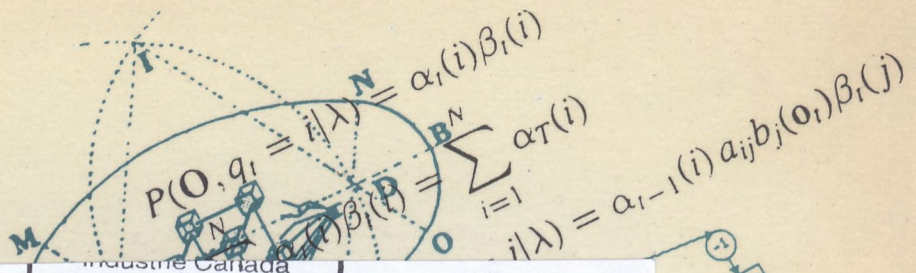
$$P(O, q_t = i|\lambda) = \alpha_t(i)\beta_t(i)$$

$$= \sum_{i=1}^{B^N} \alpha_T(i)$$

$$i|\lambda) = \alpha_{t-1}(i)\, a_{ij} b_j(o_t)\beta_t(j)$$

Annotated Bibliography on Multimedia
Technical Report

by

Ruben Gonzalez Rubio
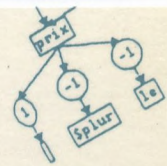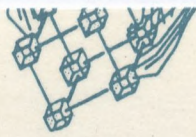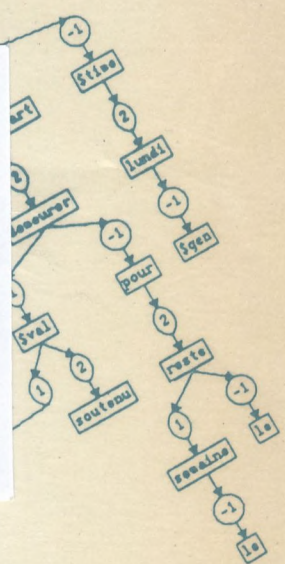
CITI

Centre d'innovation
en technologies de l'information

Centre for Information
Technology Innovation

Canada

Industry Canada
Centre for Information Technology Innovation (CITI)

Annotated Bibliography on Multimedia
Technical Report

by

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Laval
October 1993

Aussi disponible en français sous le titre de
<u>Bibliographie commentée sur le multimédia</u>

This report was prepared in connection with work carried out by Centre for
Information Technology Innovation (CITI) of Industry Canada. The views
expressed in the report are those of the authors.

Contents

Summary

This report contains a reference guide on multimedia and an annotated bibliography on the same subject. The bibliography is a basic list not intended to be exhaustive. We limited our reference research to technical magazines and books. We were more interested in subjects related to the developments in the Medialog or Multinews projects. We tried to find basic references instead of articles or books that only mention the keyword "multimedia". We also chose several references on subjects that do not cover multimedia exclusively, such as databases, object-oriented programming and others.

The bibliography in the report was drawn up in September 1993.

Keywords: Multimedia.

1 Introduction

This report contains a reference guide on multimedia and an annotated bibliography on the subject. Multimedia is a very vast, poorly delimited subject. There is no clear definition of the term. Several keywords recur in documents that discuss the subject, but there is no consensus. Some of them are:

- interactive, for example in viewer-controlled television;

- multimedia document, where text, images, sound and video are all on the same platform;

- multimedia communications, which transmit video and sound between two computers via a network to establish communications such as videophone;

- and others.

Several technologies that have been developed in response to specific needs must be combined in order to produce a multimedia product, which is then defined according to

those technologies and how they are integrated. Computers, computer networks, compact disks and video, for example, are all technologies that underwent independent development. A multimedia product integrates several existing technologies and sometimes requires the development of new ones or advances in current ones.

For this bibliography, we first tried to find summaries of conferences or technical journals (research) on the subject. To our knowledge, there have been very few conferences on the subject so far. We can list:

- The First ACM International Conference on Multimedia: ACM Multimedia '93, in August 1993.

- International Workshop on Network and Operating System Support for Digital Audio and Video, the fourth is in November 1993.

The first IEEE conference on the subject is the 1994 International Conference on Multimedia Computing and Systems in February 1994.

Multimedia Systems, which published its first issue in August, is the only known trade journal. An IEEE journal is to be published in 1994.

Multimedia is discussed extensively in magazines for the general public. In general, articles review the multimedia products available on the market or ones that will be released soon.

Several very recent books, such as [BT93], [HS93] and [Ter92], give an overview of the field.

Consequently, we decided to concentrate our research on articles about multimedia in journals such as Communications of the ACM, Computer, IEEE Spectrum and Multimedia Systems.

In the guide section, and in the notes, we indicate certain articles and journal issues as references in the documents read. We were not able to find the articles to include them in

this report. In most cases we tried to obtain them.

The rest of this report is a reading guide of references listed in the bibliography.

2 Reading Guide

This section includes several suggestions on how to classify documents about multimedia to help choose which documents to read. A few comments are necessary before continuing. We do not include all the documents in a given classification. Sometimes a document may be in two or more classes.

Readings may also be chosen according to the notes accompanying every reference in the bibliography.

2.1 Introductory documents

This classification is extremely simple. There are two classes of documents: introductory and specialized.

- Introductory documents about multimedia: magazine articles [Ada93b], [Ada93a], [Col93] and [Fox91a] or the books [BT93], [HS93] and [Ter92].

- All the other documents are viewed as specialized.

2.2 By type of media

Since multimedia combines four types of media, it is simple to have four classes of media plus one other class for all other articles.

- Text: [Bac92], [BG92], [Bar88], [Bar89], [BC92], [BT93], [BGH+92], [BB92], [CR90], [Col93], [FM91], [FD92], [GNOT92], [HKR+92], [HG91], [Loe92],

[MRT91], [Nie90a], [Nie90b], [Ram92] [SK92], [Ste92], [Ter92] and [WM92];

- Still pictures: [BT93], [CH91], [Col93], [HS93], [Ter92] and [Wal91];

- Sound (audio): [BT93], [Col93], [Fox91b] [HS93], [Ter92] and [YSB$^+$89];

- Video: [Ada93b], [Ada93a], [AH91], [BHI93], [BT93], [Col93], [Dix89], [FM91], [FKRR93], [Fox89], [Fox91b], [Fox91a], [Fre89], [Gre92], [HKL$^+$91], [HS93], [HG91], [Le 91], [LH91], [Lio91], [LB89], [Lip91], [LG91], [MD89], [Rip89], [Sv91], [Ste89], [Ter92], [Tin89], [VZSR91] and [ZKS93];

- Others:

  - Databases: [BOS91], [Deu91], [LLOW91], [LG91], [LLPS91], [SSU91], [SK91], [Ull88] and [ZM90];

  - Electronic mail: [Bor91], [Bor93] [GNOT92], [PF91] and [Sch93] ;

  - Interfaces: [MN90], [Nie90a] and [Nie90b];

  - Programming, especially object-oriented programming: [Agh90], [GTC$^+$90], [HSE90], [HBP$^+$93] [Jor90], [Kil90], [KM90], [Mey88], [Mey90] and [WBJ90];

  - Networks: [ALP93], [Bel93], [HG91], [LG91], [Lyl93], [PF91], [Sch93] and [VZSR91].

2.3   By type of application

We think that many well-established industries, such as television (cable), computer and telecommunications (networks and new telephone services), are interested in multimedia.

- Television:

  - Games, video disks: [BT93], [Fre89], [LH91], [Sv91], [Ter92] and [YSB$^+$89];

  - Interactive television, by cable: [Fre89];

- Computers:

– Consulting multimedia documents stored on disks or CD-ROM: [Ada93b], [Bac92], [BG92], [Bar88], [Bar89], [BC92], [BT93], [BB92], [CR90], [Col93], [CH91], [Dix89], [FM91], [FD92], [Fox89], [Fox91b], [Fox91a], [Gre92], [HKR+92], [HKL+91], [HS93], [HG91], [Le 91], [LH91], [LB89], [Lip91], [Loe92], [MD89], [MRT91], [MN90], [Nie90a], [Nie90b], [Ram92], [Rip89], [SK92], [Ter92], [Tin89], [Wal91], [WM92] and [ZKS93];

– Consulting multimedia documents stored on multimedia databases: [ALP93], [AH91], [Bac92], [BG92], [Bar88], [Bar89], [BC92], [Bel93], [BT93], [BGH+92], [BB92], [BOS91], [CH91], [Col93], [Deu91], [FD92], [HS93], [HG91], [LLOW91], [LG91], [LLPS91], [MD89], [Ram92], [SSU91], [Ste89], [SK91], [Ter92], [Ull88], [WM92] and [ZM90];

• Telecommunications:

– Teleconferencing (more than two people) and videophone (two people): [ALP93], [AH91], [Bel93], [BHI93], [FKRR93], [Lio91], [Lyl93] and [VZSR91];

– Electronic mail and multimedia documents: [Bor91], [Bor93] [GNOT92], [PF91] and [Sch93].

There is obviously no longer a clear-cut boundary between these industries. This can be illustrated by two examples: consulting multimedia documents stored on multimedia databases and the case of multimedia electronic mail. Both of these use computers and networks.

2.4 By type of development

Several phases are required to produce a multimedia document, with different problems to solve in each one. We have divided development into the following phases: data entry, compression, storage, access, information presentation and the special case of communications.

• Data entry: [AH91], [BT93] and [Sv91] ;

- Data compression: [BT93], [BB92], [CH91], [Dix89], [Fox89], [Fox91b], [Fox91a], [Fre89], [Gre92], [HKL$^+$91], [Le 91], [LH91], [Lio91], [LB89], [Lip91], [MD89], [Rip89], [Ter92], [Tin89], [Wal91] and [ZKS93];

- Data storage: [BT93], [Col93] [Ter92] and [YSB$^+$89];

- Data access: [Bac92], [BG92], [Bar88], [Bar89], [BC92], [Bel93], [BT93], [BGH$^+$92], [BOS91], [Col93], [Deu91], [FD92], [Fox91b], [GNOT92], [HKR$^+$92], [HS93], [HG91], [LLOW91], [LG91], [Loe92], [LLPS91], [Ram92], [SSU91], [SK92], [Ste92], [SK91], [Ter92], [Ull88], [WM92] and [ZM90];

- Information presentation: [Ada93b], [CR90], [FM91], [HKR$^+$92], [HBP$^+$93], [HS93], [HG91], [MRT91], [MN90], [Nie90a] and [Nie90b];

- Communications: [ALP93], [Bel93], [BHI93], [Bor91], [Bor93], [FKRR93], [GNOT92], [Lyl93], [PF91], [Sch93], [Ste89] and [VZSR91],

3 Conclusion

We found that multimedia is undergoing major growth: there are new conferences, journals, books and developments appearing every day. Multimedia developments are only beginning to surface and the field offers many opportunities. Maintaining an up-to-date annotated bibliography on chosen subjects is necessary.

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Article discussing several projects such as the National Demonstration Laboratory for Interactive Information Technologies (NDL) in Washington, DC, First Cities at MCC, MAEstro at Stanford, Advanced Learning Technologies at CMU, Muse 1 and AthenaMuse 2 at MIT, electronic journals. Found one IEEE Computer Graphics and Application Magazine from 1991 (might be July 1991) and

another on authoring in Technological Horizons in Education Journal (Feb 1992) on MAEstro. The article discusses the features expected for AthenaMuse 2. The Miami Herald and San Jose Mercury News, The Washington Post and The New York Times newspapers are interested in multimedia. Nynex will distribute a multimedia journal.

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[Col93]   Bernard Cole. The technology framework. *IEEE Spectrum*, 30(3):32–39, March 1993.

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