

Developments In Business Simulation & Experiential Exercises, Volume 23, 1996

Multimedia in the Workplace: Who is Really Using it and Where is it Headed?

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ABSTRACT

Multimedia combines a wide range of absorbing sight and sound, and is designed to impress audiences with both the content of the presentation and the technology behind it. This study looks at how industry views the phenomenon of multimedia and outlines their expectations and desires towards this newest medium of presentation. Data taken from recent market surveys indicates that presentations and training dominate multimedia usage. While video-conferencing and groupware hold the promise to lead multimedia into the 21st century. The paper concludes by forecasting what effects the World Wide Web and the internet will have on the spread of multimedia use in industry.

INTRODUCTION

Multimedia has been defined as "...the coordinated combination of video, sound, text, animation, and graphics" (Bruder, 1991). Although this combination of presentation formats is still in its infancy, research is being conducted to build a base of theory to guide applications for multimedia. Most research on multimedia applications is being focused on classroom oriented instruction. Unfortunately, workplace applications of multimedia are being largely ignored. Perhaps due to the infancy of the presentation medium, multimedia has attracted academics, whose research focus has been on classroom instruction. However, data is beginning to be gathered concerning the role of multimedia in industrial applications. The purpose of this research paper is to provide a synopsis of what industry is doing with multimedia, how the workplace views this newest form of experiential tools of instruction, and what effects the information super-highway will have on the spread of multimedia uses.

Multimedia in the Workplace

As Peter Jerram wrote "many industry analysts believe that the full impact of multimedia in the workplace won't be felt

until enterprise-wide performance-support applications" ... are developed (1994, p. 48). Most organizations are waiting for better technology, more powerful networks and more user-friendly software. This wait is also due to case studies of unsuccessful implementations of multimedia. Big-budget projects have often suffered from technical limitations, cost overruns and poor planning. However, more aggressive companies are using multimedia. Their position is that multimedia has the promise of allowing them to develop a sustainable competitive advantage --- a goal that any organization can appreciate.

Two applications for multimedia are garnering the most attention: presentations and training. These two applications for multimedia are proving to be useful, profitable tasks. According to Dataquest's Demand for Multimedia in Large Business, a study of 200 large corporations that are using some form of multimedia, one-third of the respondents are using multimedia presentation tools, and another 22 percent are using mixed media to improve internal training courses.

The demand for workplace applications of multimedia is dwarfed by an estimated \$16 billion consumer market for multimedia technology. In comparison, industrial expenditures for multimedia in 1994 summed to \$2 billion. Today's high-end multimedia systems and peripherals are aimed at the home market, while scaled down budgetary versions are directed towards corporations. The reasons for the lag: a lack of necessary hardware, cautious adoption strategies and a view of information as mere words and numbers. Consumer markets do not take advantage of technologies of dynamic media, such as video on demand at a click of a button from remote locations. However, organizations require the ability to teleconference and video-conference, aspects of which multimedia has been slow to utilize. High bandwidth networks and phone lines are not plentiful in corporate (or consumer) markets.

Corporations want to see demonstrable results before committing to equipment and resources in a survey of

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nearly 1,400 large and small U.S. businesses conducted by international Data Corp. earlier this year, information technology managers ranked the use of multimedia in their corporations at about 2 on a scale of 1 to 5 (5 being high use). Yet, the hope for multimedia is still alive and well. Of the 200 businesses surveyed in the Data Corp. study, 75 were in finance, insurance, real estate, medicine, law, architecture and engineering. This suggests that multimedia will eventually affect most industries. In the report Multimedia Applications and Markets (1995 Annual Forecast). Market Vision projects that the business market for multimedia will jump to \$10 billion by 1998.

Table 1 – Primary Multimedia Users

Use	5 of companies in survey that used form of Multimedia
Presentations	66%
Training	63%
Videoconferencing	25%
Advertising	19%
CD-ROM Titles	11%
Others	8%

Training

Indications are that multimedia in the workplace begins where productivity gains can be most immediately felt, or where costs can be cut. Training to accommodate both money saving efforts has received the largest amount of attention. In a recent survey by the Gartner Group, nearly half of the 217 respondents said their organizations had a multimedia project in production or in the prototype and pilot stages. The Gartner Group divides its clients into type A, B, or C categories, with A being the most technologically aggressive, B the more mainstream companies that wait until there is less risk associated with an emerging technology, and type C being businesses that haven't yet formed a clear technology strategy. Gartner's study indicates that even type B companies are beginning to use multimedia for training, because it's a lower risk application. While corporate training applications require a larger investment than

presentations, the investment is paying off: self-paced multimedia courses delivered on a CD-ROM or over a network can save millions of dollars. Savings aside, many are finding it is more effective to teach with pictures, sound and video than boring lectures and overheads. The main reason why multimedia training is not more widespread is that many companies won't risk the steep development expense. As Peter Jerram writes, "companies that can analyze ROI and believe that development costs will be recouped are more likely to move forward (1994, p. 54). As a rule of thumb, multimedia is generally thought to be preferable if the content is relatively stable and will be used to train at least 100 employees. Stability is necessary due to the costs involved with updating presentations. While presentations can be updated, it is often cheaper to develop an entire new presentation than it is to re-do a part of it. The target number -- 100 employees -- allows organizations to build in economies of scale with multimedia and monitor per-employee costs.

Presentations

Perhaps the most visible trend in corporate multimedia is the rise of computer-based presentations. Presentation applications in the workplace differ from the presentations that academicians think of when they hear the word "presentation". In the sphere of education, presentations are developed by a specialist in a particular field and given to a select audience. Presentations in the workplace are routinely assembled by people throughout the organization, making presentation design a team effort. It also makes their development more difficult and their timely completion more unlikely. New presentation software, less expensive LCD projection panels and a growing trend toward sales automation have spurred a proliferation of glitzy presentations. Presentation magazine reported earlier this year that 40 percent of its readers now use electronic presentations rather than traditional methods. The fear amongst corporations is that audiences will become jaded to such presentations. Presenters are constantly confronting audiences dulled by the onslaught of technical, financial, and marketing pitches. At the same time, corporations are using presentation software to stand out from the crowd. Multimedia

presentations have proliferated in part because the software has become more user-friendly. Many presenters are encouraged by new packages, such as Astound, Compel, and Q/Media. For more complex presentations, companies are still turning to outside experts. This outsourcing is done for anything that requires a degree of sophistication. Advertisers and corporations are tapping many of these multimedia market pros to develop interactive advertisements. Many organizations hire outside specialists to develop their first multimedia courses. This can help win over skeptical management by demonstrating the new approach on a relatively small scale. Others save money by stocking corporate libraries with off-the-shelf multimedia training discs. Some progressive companies are going further by attempting to integrate diverse information resources and make them available on demand.

The digital nature of multimedia also makes it an ideal way to apply information in different environments. Multipurpose presentations can be displayed in kiosks, used in customer presentations and used to orient new employees. Kiosks are being used increasingly in public places and retail outlets. Hotels use them to direct convention-goers to meeting rooms and to funnel guests to local shops and restaurants, which pay for the exposure.

The storage medium for multimedia differs from its predecessors. CD-ROMs storage is now replacing videotape and videodisc systems. Although CD-ROM video still has a long way to go to match videodisc, CD-ROM-based kiosks are cheaper, they permit more cost-effective updating, and some systems allow custom messages to be added via modem. Kiosks are particularly popular with record and video retailers, who are betting that customers will spend more if they can try before they buy.

Video-conferencing

The third most often use for multimedia in the workplace is video conferencing. Market Estimates are that by 1998 nearly half of business multimedia activity will center on

communications and collaborative applications. However, vast infrastructure upgrades will be necessary before applications like video-conferencing become widespread. At present, vendors are scrambling for position. Novell and Starlight Networks have augmented their networking products to incorporate video server technology. The server can deliver a presentation over a wide area network to a kiosk or other remote locations. The approach has advantages over conventional disk-based kiosks because the material can be updated and sent virtually anywhere in the world.

LAN-based e-mail systems, which most corporations already have in place, are a natural delivery vehicle for mixed-media information. These systems may get multimedia content flying within and between corporations. Even academic environments are getting in on the act. Many university systems use LANs to communicate between faculty, staff and students and many are upgrading to fiber optics.

The holy grail of collaborative multimedia is desktop video-conferencing. Businesses are spending billions each year by sending employees to meetings, a fact not overlooked in this era of corporate cost-cutting. Meeting by computer is naturally appealing, but it is also technically demanding. Aside from the network upgrades necessary to handle increased traffic, corporations need high-speed telephone connections such as ISDN to make video-conferencing viable on a scale wide enough to save money. Video-conferencing using the plain old telephone system is possible, but it does not allow current technologies to use high-resolution video. Groupware, or software designed to manage server-client networks is fostering implementation of cross-connectivity between and within organizations.

The Users and the Future

Table 2, compiled from a study conducted from the Data Corp., indicates that the profession most heavily involved in multimedia is engineering, followed in usage by department managers, technicians and programmers.

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Table 2 – Jobs that Use Multimedia

Job Title	% of total in study	% that used Multimedia
Educator	1%	1%
Owner	1%	1%
Designer / Producer	7.5%	7.5%
Project Manager	7.5%	13%
Programmer	13%	14%
Technician	14%	14.45%
Dept. Manager	14.5%	2.5%
Scientist	2.55	21.5%
Engineer	21.5%	3%
Consultant	3%	4%
Specialist	4%	5%
Manager	5%	5.5%
MIS Manager	5.5%	1%

What is interesting from the study was the finding that managers, educators, scientists and consultants rarely use multimedia. No pattern appears from the results. Those using multimedia most seem to have technical needs, except for the general classification of managers, but scientists, truly one of the most technical professions, rarely uses multimedia. This is perplexing, and may be a result of a limited data set used by Data Corp. The findings may also result from availability. The study did not inquire as to whether each specific discipline had ACCESS to multimedia. With the medium of multimedia many users will not ask for it, but once provided with the tool will take multimedia users to new heights.

Table 3 is a result of a study conducted by Market Vision. The results of this study agree with other market studies, which indicate that presentations and training are where corporate multimedia will be at. Communications and collaboration, two interrelated activities are expected to make significant gains in terms of attention and expenditures.

Table 3 – Business User Market Share – 1998

Use	% of segments that will use Multimedia
Collaboration	19%
Presentations	24%
Information	10%
Management	20%
Communications	23%
Training	19.8%
Information	10%

The World Wide Web and The Future of Multimedia

In August 1995, Netscape¹ announced that it would make an initial public offering (IPO) of its stock. The groundswell in demand for the IPO far outstripped supply and resulted in massive swings in the stock price after the IPO. The activity generated by Netscape is an indication of how the industry is viewing the Internet. Vendors are currently scrambling to register their unique identifier name (or URL - universal resource locator). Fidelity investments has registered the name FIJNDS.COM, Clorox has registered LIQUIDPLUMR.COM, and Proctor and Gamble has registered. PIMPLES.COM. DANDRUFF.COM. and UNDERARM.COM. Why all the attention to world wide web naming? The world wide web or internet is today what the wild west was one hundred and twenty five years ago. Companies know that the entry barriers to the internet are small, and are therefore positioning themselves to have multimedia platforms up and running as consumers gain access to the web via services such as On-Line America. Prodigy. CompuServe, and The Microsoft Network. Netscape is leading the way and attracting the most attention from workplace enthusiasts of the internet. With an estimated 75% market share. Netscape is combining its main product, Netscape Navigator with multimedia

¹ Netscape is the dominant "web browser" software for Internet applications, holding 60-75% of the market A web browser is a reference medium, enabling users to navigate the internal and search for information. Web browsers also index web sites so that repeat searches are easier.

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developers such as Macromedia, Adobe, and Sun Java to create a new internet programming language to replace the current hypertext markup language (HTML).

The new focus by type "A" companies on the Internet is a recognition that network computing is expected to play a key role in multimedia distribution, and that the increased bandwidth needed to make that happen will soon be available on a wide-spread basis. What this means for the workplace is that the internet could serve as the host for training, presenting, or any other form of experiential learning. Once a company establishes a web server,² or dedicated Internet machine complete with its own identifiable address, any one either hard-wired into the internet or having high-speed access could view the multimedia, either for a simulcast presentation or a self-paced mode of instruction. More importantly, by using the web, more companies will be able to justify using multimedia as an effective method of both lowering costs and boosting productivity.

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² A web server is a workstation that is hardwired (via fiber optics and/or coaxial wiring) into the existing information superhighway'. The most popular way to achieve this is to splice into an existing branch of the internet. Companies create a T1 line, which is a branch from another server location. Once connectivity is created to the internet, a web server and web software can provide users with access to the company's products and services.