CHAPTER 8

Multimedia Skills

In this chapter, you will learn how to:

- Identify the typical members of a multimedia project team and describe the skills that they need for their work
- Understand the importance of selecting and managing a team in order to produce successful multimedia projects

Computer scientists, physicians, and firemen share highest honors as the most respected professions in the United States, according to a recent study of occupations. Are multimedia developers computer scientists? Or are they programmers, graphic artists, musicians, animators, storyboard craftspeople, information specialists, instructional designers, and/or Renaissance authors? However you define them, they come from all corners of the computer, art, literary, film, and audio worlds. Video producers become experts with computer-generated animations and MIDI controls for their edit suites. Architects become bored with two-dimensional drafting and create three-dimensional animated walkthroughs. Oil field engineers get tired of manipulating complex data sets and design mouse-driven human interfaces. Classical painters learn the electronic elements of red, green, and blue and create fantastic, computer-based artwork. A multimedia developer might be any or all of these and typically doesn’t fit a traditional management information system (MIS) or computer science mold; many have never seen a line of C++ code or booted up a Linux server. Perhaps, in the broadest definition, multimedia developers might simply be called information technology workers.

Consider Leonardo da Vinci, the Renaissance man who was scientist, architect, builder, creative designer, craftsman, and poet folded into one. To produce good multimedia, you will need a similar diverse range of skills—detailed knowledge of computers, text, graphic arts, sound, and video. These skills, the multimedia skill set, may be available in a single individual or, more likely, in a composite of individuals working as a team. Complex multimedia projects are, indeed, often assembled by teams of artists and computer craftspeople, where tasks can be delegated to those most skilled in a particular discipline or craft. Many job titles and collaborative team roles for multimedia development are being adapted to pull from a mix of motion picture industry, radio and television broadcasting, and computer software industry experiences.
WARNING  A multimedia expert working alone will be hard-pressed to compete with a multidisciplinary team of experts and may be overwhelmed by the sheer amount of effort required to build a complex project single-handedly.

The Team

A typical team for developing multimedia for DVD or the Web consists of people who bring various abilities to the table. Often, individual members of multimedia production teams wear several hats: graphic designers may also do interface design, scanning, and image processing. A project manager or producer may also be the video producer or scriptwriter. Depending upon the scope and content of your project and the mix of people required, according to Wes Baker, a professor at Cedarville University in Cedarville, Ohio, a multimedia production team may require as many as 18 discrete roles, including:

- Executive Producer
- Producer/Project Manager
- Creative Director/Multimedia Designer
- Art Director/Visual Designer
- Artist
- Interface Designer
- Game Designer
- Subject Matter Expert
- Instructional Designer/Training Specialist
- Scriptwriter
- Animator (2-D/3-D)
- Sound Producer
- Music Composer
- Video Producer
- Multimedia Programmer
- HTML Coder
- Lawyer/Media Acquisition
- Marketing Director

Project Manager

A project manager’s role is at the center of the action. He or she is responsible for the overall development and implementation of a project as well as for day-to-day operations. Budgets, schedules, creative sessions, time sheets, illness, invoices, and team dynamics—the project manager is the glue that holds it together.

Mere possession of the equipment does not make one into a videographer, film editor, set designer, scriptwriter, audio engineer, animator, and programmer. Some people do possess all of the innate talents required to produce decent multimedia, but few have mastered all the skills required to bring a major project to fruition. More typically, world-class productions are realized through the teamwork of a variety of talented people with specialized experience.

Jeff Burger, Contributing Editor, NewMedia magazine
Mark Williams

Production of a CD-ROM reference guide at Microsoft involved a core team headed by project manager Mark Williams, along with additional specialists, technicians, and assistants, who were brought on board as needed.

At Microsoft, project managers are called program managers, but it means exactly the same thing. The program manager has two major areas of responsibility: design and management. Design consists of devising a vision for the product, working out the complete functionality with the design team, and then putting it into a complete functional spec and adjusting it as necessary throughout the development of the product. The management side consists of scheduling and assigning tasks, running meetings, and managing milestones—essentially overseeing all aspects of product development from beginning to end.

Our core team consisted of a project manager (me), a subject matter expert (who is called an editor at Microsoft), a graphic designer, and a programmer (also called a software development engineer). Another important team member was the product manager—a marketing person who is responsible for representing the product to the outside world. We also found that it was very valuable to get early design input from the person who creates the online and printed help for the product and from the person who eventually manages the testing of the product.

In the production phase we brought in additional talent for scanning images, digitizing sound, proofreading, and other production tasks. We also worked with numerous specialists along the way, such as an audio producer for securing sound track material and, crucially, acquisitions specialists. The acquisitions folks were vital to the effort because we were trying to get a variety of media from people who really didn’t understand what we were doing.

Specing the right content and being able to acquire it was critical. Our pictures and content are all of the highest quality, and the design is clear and easy to use. Keeping a vision of the product in mind—and making sure that the design really meets the needs of the end user—is very important. Constant usability testing gives us a way to keep the end user involved in the design process.

A good project manager must completely understand the strengths and limitations of hardware and software so that he or she can make good decisions about what to do and what not to do. Aside from that I’d say the most important skills are people skills (keeping your team happy and motivated), organizational skills, and attention to all the myriad details of a
project. At the same time, it’s critical to keep the big picture, the vision, in mind, so that everything that needs to get done does in fact get done.

Project Manager/Interface Expert
Multimedia company looking to immediately fill position working on interactive television project for major telecommunications company. Project manager needed to manage production and design efforts on large-scale, interactive television project for air in United States.
• Must be adept and experienced at managing complex projects, preferably with large corporate accounts.
• Must have solid understanding of interactivity and experience with interactive media in the broadcast television world.
• Must have several years of experience with interface design or have worked in management of an interface design group.
• Must have good design sensibilities.
• Communication skills a must; candidate must be an articulate and effective communicator, an excellent listener, and should be able to act as a conduit for the information passing between our team and the client’s teams.
• Superior attention to detail and ability to coordinate large amounts of information a must.
• Prefer entertainment experience—ideally, television or video production.
• Solid computer or digital media experience and knowledge a must.
• Travel required for visiting focus groups and gathering consumer information.
• Must function well in fast-paced, team-oriented environment.
• Position must be filled immediately.

Multimedia Designer
The look and feel of a multimedia project should be pleasing and aesthetic, as well as inviting and engaging. Screens should present an appealing mix of color, shape, and type. The project should maintain visual consistency, using only those elements that support the overall message of the program. Navigation clues should be clear and consistent, icons should be meaningful, and screen elements should be simple and straightforward. If the project is instructional, its design should be sensitive to the needs and styles of its learner population, demonstrate sound instructional principles, and promote mastery of subject matter. But who puts it all together?

Graphic designers, illustrators, animators, and image processing specialists deal with the visuals. **Instructional designers** are specialists in education or training and make sure that the subject matter is clear and properly presented for the intended audience. **Interface designers** devise the navigation pathways and content maps. **Information designers**
structure content, determine user pathways and feedback, and select presentation media based on an awareness of the strengths of the many separate media that make up multimedia. All can be multimedia designers.

**Kurt Andersen**

Kurt Andersen is an instructional designer and was a senior designer at the George Lucas Educational Foundation, where he designed multimedia prototypes for middle school math and science curricula.

A multimedia designer often wears many hats, but most importantly he or she looks at the overall content of a project, creates a structure for the content, determines the design elements required to support that structure, and then decides which media are appropriate for presenting which pieces of content. In essence, the multimedia designer (sometimes called an information designer) prepares the blueprint for the entire project: content, media, and interaction.

From an interactive standpoint, many multimedia projects are too passive—you click and watch. The challenge is to get beyond what is appealing visually and design products that are activity-based. A multimedia project needs to be truly interactive, and this means that as a designer you have to have a clear picture of what goes on whenever the user interacts with the program.

Advances in technology are bringing us closer to this point. For example, one of the most interesting things going on is the development of adaptive systems, which accept user input and modify themselves based on this input. In training projects, they’re called intelligent tutors. Right now, we’re working on a medical application that will analyze a patient’s history and background in order to present information that is personalized to that particular patient.

I was recently a member of two different teams that developed multimedia prototypes for middle school science and mathematics at the George Lucas Educational Foundation. Our approach was to develop prototypes that might be distributed as exemplars of rigorous, engaging, effective multimedia design using leading-edge technology. The real challenge was to create a program that presented mathematics so that users could play, explore, and develop their own conceptual schema around the concepts we were developing. We were also challenged to implement our ideas from a technological standpoint. For example, we wound up hooking up a high-end rendering machine so that we could do 3-D graphics on the fly.

Multimedia designers need a variety of skills. You need to be able to analyze content structurally and match it up with effective presentation
methods. You need to be an expert on different media types, and a capable media integrator, in order to create an overall vision. The ability to look at information from different points of view and a willingness to shift your own point of view to be empathetic with end users are absolutely essential. So are interpersonal skills, because you spend so much of your time interacting with other team members and with clients, as well as extracting information from subject matter experts. You must be able to "talk the talk" with all of them. Finally, you must understand the capabilities of your resources, both technological and human, and know when to push ahead and when to stop.

Multimedia Designer/Producer

Seeking an experienced, new-media professional who loves inventing the future and enjoys the challenge of integrating complex information and media systems.

Our ideal candidate has solid experience in interface design, product prototyping, and marketing communication. Knowledge of image manipulation is critical, as well as proven skills in Lingo scripting and the use of digital time-based authoring tools. We seek a team player with excellent communication skills and grace under pressure.

• Must have experience designing large information and/or entertainment systems.
• Must have experience creating system flows and program architectures.
• Must have solid organizational skills and attention to detail.

Interface Designer

Like a good film editor, an interface designer’s best work is never seen by the viewer—it’s “transparent.” In its simplest form, an interface provides control to the people who use it. It also provides access to the “media” part of multimedia, meaning the text, graphics, animation, audio, and video—without calling attention to itself. The elegant simplicity of a multimedia title screen, the ease with which a user can move about within a project, effective use of windows, backgrounds, icons, and control panels—these are the result of an interface designer’s work.

Nicole Lazzaro

Nicole Lazzaro is an award-winning interface designer with XEODesign in Oakland, California, and teaches interface design at San Francisco State University’s Multimedia Studies Program. She spends her days thinking of new ways to design multimedia interfaces that feel more like real life.

The role of an interface designer is to create a software device that organizes the multimedia content, lets the user access or modify that content, and presents the content on screen. These three areas—information
design, interactive design, and media design—are central to the creation of any interface, and of course they overlap.

In the real world, design responsibilities are often assigned differently depending on the project. An interface designer may also be the multimedia designer or the graphic designer. Sometimes all of the design is given to one person; sometimes it is divided among group members; and sometimes the interface springs from the group as a whole.

In the best of all worlds, everyone has input into the final vision, but realistically, everyone also has other responsibilities outside of interface design. The advantage of dedicating one team member experienced in a number of interface solutions to this particular task is to make sure the end user does not get left out of the equation. A good interface designer will create a product that rewards exploration and encourages use. You have to design the interface from the ground up, not just slap on some graphics and fancy icons after most of the programming is done.

A crucial skill is being familiar with a lot of multimedia interfaces so that you are able to visualize ideas as they are discussed. What is the best way to represent this function? Will this program look better using a hierarchical menu or a book metaphor? What will be the user’s experience? Being familiar with film or video editing can be helpful, because telling a story with sounds and images is what most multimedia experiences are all about. From a visual perspective, cinematography and film editing are, I think, the closest parallels to what we would call interface design. These techniques can seamlessly change a point of view or tell a story more effectively, and they are being used by interface designers today. Knowing an authoring system is also crucial, so that you can develop your ideas in some interactive fashion and be able to present them to your design group. Having basic drawing skills also helps, because then you can describe how a screen looks using pencil and paper. Also, learn how to do user testing, and do lots of it!

| Artist/Designer | needed to create graphics for interactive multimedia titles aimed at children. Solid experience in graphic design, including knowledge of Adobe Photoshop and Adobe Premiere. Must have superior illustration ability. Must have experience in animation. Experience in video graphics and editing (Premiere, Avid, Media100, etc.) a plus. |

**Writer**

Multimedia writers do everything writers of linear media do, and more. They create character, action, and point of view—a traditional **scriptwriter**’s
tools of the trade—and they also create interactivity. They write proposals, they script voice-overs and actors’ narrations, they write text screens to deliver messages, and they develop characters designed for an interactive environment.

Writers of text screens are sometimes referred to as content writers. They glean information from content experts, synthesize it, and then communicate it in a clear and concise manner. Scriptwriters write dialog, narration, and voice-overs. Both often get involved in overall design.

**Domenic Stansberry**

Domenic Stansberry is a writer/designer who has worked on interactive multimedia dramas for commercial products. He has also written for documentary film and published two books of fiction.

The role of the writer changes with each different project, depending on the people you’re working with. But multimedia writing is always different from writing a film or video script. In a film or video, you’re plotting a story the way a dramatist or novelist would. With multimedia, it can be more difficult: you’re still thinking dramatically, but in smaller, more discrete units that have to interrelate to each other, and that have to be compiled into a puzzle of sorts.

In traditional drama there are characters and an inevitability about what happens to those characters. You build circumstances that have certain significance for your characters as they go on to meet their destiny. In multimedia, we plot out stories that can go many different ways. This is inherently contradictory to the way we’ve thought about dramatic structure. Intelligent writers are still working hard to invent interactive dramatic structures: we see some attempts in games, which are obstacle driven. The user needs to perform a task and is presented with an obstacle—and then a need to overcome the obstacle and move on. This is not unlike the position a character takes in a story or movie where characters are presented with physical or psychological obstacles and must find a way to get beyond them. It’s really too bad that writers are not brought in on more game projects…the quality of the interaction would be much higher if they were.

I work best when I am involved at the conceptual level of a project, but in many projects, the flowcharts are generated first. Then as the writing process unfolds, you find that the flowchart doesn’t work because the material isn’t what the flowchart wants it to be. When you’re working on a dramatic script, you have to make the characters and the drama work first, before you start doing flowcharts. So if the writer is invited into the process at Step 7 and handed a flowchart, you’re going to run into a
problem. Another problem lies in working with people who are mainly from computer backgrounds. They are used to the writer as a writer of documentation—someone who comes in at the end of a project and writes a manual about how the product works. Computer people are often very uncomfortable with media people playing a role at the heart of the creative process. You need to develop a sense about where other team members are coming from when you are brought on to a project, and try to educate them if necessary.

But in the final analysis, the producer or project manager has to be the person to handle conflict in differing team members’ visions. A good producer will get the most out of team members by getting them to work not against each other, but together toward their strengths. There are bound to be competing visions on a project, and in the best-case scenario, the team members will work out their differences through a consensus process. But if they can't, the producer has to have a guiding vision.

**Multimedia Writer** needed for multimedia kiosk in retail outlet. Must be familiar with interactive design and user interface issues. Background in marketing or copywriting a plus. Ability to work under tight deadlines in a team environment essential. Candidates will be asked to provide writing samples.

### Video Specialist

Prior to the 2000s, producing video was extremely expensive, requiring a large crew and expensive equipment. Recently, however, the cost of the equipment and the size of the crew needed have dropped dramatically, and digital video presentation methods have combined increasingly capable hardware and software. The result is that video images delivered in a multimedia production have improved from postage-stamp-sized windows playing at low frame rates to full-screen (or nearly full-screen) windows playing at 30 frames per second. As shooting, editing, and preparing video has migrated to an all-digital format and become increasingly affordable to multimedia developers, video elements have become more and more part of the multimedia mix.

For high-quality productions, it may still be necessary for a **video specialist** to be responsible for an entire team of videographers, sound technicians, lighting designers, set designers, script supervisors, gaffers, grips, production assistants, and actors. However, for many modest projects, a video specialist may shoot and edit all of the footage without outside help.

Whether working individually or managing a large crew, a video specialist needs to understand how to shoot quality video, how to transfer the video footage to a computer, how to edit the footage down to the
final product using a digital nonlinear editing system (NLE), and how to prepare the completed video files for the most efficient delivery on DVD or the Web.

**Oliver Streuli**

Oliver Streuli has worked as a post-production editor on several Hollywood productions (*Silence of the Lambs*, *Family Man*, and *Rush Hour 2*). He currently works in Switzerland where he specializes in post-production of commercials, corporate marketing and educational videos, and broadcast programming.

Editing images into a creative and understandable flow is a rewarding career, although the actual work is generally done behind-the-scenes. Most people never notice good video editing, but practically everyone notices lousy work with sync problems and poor color correction. Post production includes mixing, adding titles, creating graphics and special effects, and tweaking audio. A working knowledge of tools like Adobe Photoshop, AfterEffects, and ProTools is immensely helpful, while extensive knowledge of nonlinear editing programs like Final Cut Pro or Avid is mandatory.

The workflow of a successful video project starts with good video and sound material—if the raw material is bad, there is only so much an editor can do to improve it. Editing a project can take anywhere from a few hours to a few months. For a 30-second commercial, you might have hours and hours of raw footage (also called dailies or rushes). The first edit is considered an “offline edit” and is done with compressed video and with titles and effects roughed in to save disk space. An Edit Decision List (EDL) is created during the offline editing process. This list of selected scenes becomes the “online edit,” which incorporates only footage specified in the EDL. Special effects, titles, graphics, and color corrections are then added. A sound studio will likely make an audio track of voiceovers, background music, and jingles that need to be mixed in, so a misstep during the offline editing process can trickle down and create plenty of problems later during online or audio sessions. Attention to detail and a willingness to ask questions goes a very long way towards a smooth project.

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**Video Specialist** wanted for multimedia production. Must have strong background in video direction, nonlinear editing, and preparing digital video for efficient delivery. Good understanding of shooting for interactive programming required. A background working with Ultimatte green screens for compositing live video with computer-generated backgrounds a plus.
Audio Specialist

The quality of audio elements can make or break a multimedia project. **Audio specialists** are the wizards who make a multimedia program come alive, by designing and producing music, voice-over narrations, and sound effects. They perform a variety of functions on the multimedia team and may enlist help from one or many others, including composers, audio engineers, or recording technicians. Audio specialists may be responsible for locating and selecting suitable music and talent, scheduling recording sessions, and digitizing and editing recorded material into computer files (see Chapter 4).

Chip Harris

Chip Harris studied trumpet and electronic music composition at the Peabody Conservatory of Music, and he has worked with the noted composer Jean Eichelberger Ivy. He has recorded releases on major and independent labels, including Atlantic, RCA, and Warner Brothers, has composed music for CD-ROM titles for Virgin Games, Accolade, and E-greetings, and has created soundtracks for Clio and Joey award-winning spots.

An audio specialist working in multimedia should have a thorough understanding of the requirements involved in producing a successful sound track. Most often this person will be either an engineer, technician, composer, sound designer, or any combination of the above. On the rare occasion where all of these skills are requisite for employment, the position would most likely be for an audio department manager for a good-sized and well-funded multimedia company with in-house production facilities. However, even though positions such as these aren’t plentiful, the skills and talents necessary for quality multimedia audio production are needed every day by companies who have opted to outsource their audio to independent contractors.

Whether it’s recording voice-over talent for a business application, composing a musical score for a shoot-’em up game, or designing sound effects that reflect the particular feel of a product, the end result will rely on knowing the medium going in. By this I mean, for example, at what sampling rate will the audio be delivered? How much space is available for all audio combined? Can different sampling rates be applied to voice-over and music to save space and enhance overall quality? In composition will looping be required of individual pieces to provide a seamless score and to save valuable space? And who will do the looping, the composer or the engineer? Will some voice-over talents sound presentable
at higher sampling rates but not at lower? Will the producer understand the difference?

Of course, these are only a few examples of the questions and problems to be dealt with in multimedia audio production. But attention to detail, listening for a cohesive presentation, and quality recording techniques are the strong glue that successfully binds the diverse audio components together.

**Multimedia Audio Specialist**

Audio specialist needed for multimedia project.

Must have strong background in studio recording techniques—preferably with time spent in the trenches as an engineer in a commercial studio working on a wide range of projects. Must be comfortable working with computers and be open and able to learn new technology and make it work, with high-quality results. Familiarity with standard recording practices, knowledge of music production, and the ability to work with artists a definite plus. Requires fluency in MIDI, experience with sequencing software, patch librarians, and synth programming, and knowledge of sampling/samplers, hard disk recording, and editing. In addition to having a solid technical foundation, you must be able to survive long hours in the studio riding faders and pushing buttons.

**Multimedia Programmer**

A multimedia programmer or software engineer integrates all the multimedia elements of a project into a seamless whole using an authoring system or programming language. Multimedia programming functions range from coding simple displays of multimedia elements to controlling peripheral devices and managing complex timing, transitions, and record keeping. Creative multimedia programmers can coax extra (and sometimes unexpected) performance from multimedia-authoring and programming systems. Without programming talent, there can be no multimedia. Code, whether written in JavaScript, OpenScript, Lingo, RevTalk, PHP, Java, or C++, is the sheet music played by a well-orchestrated multimedia project.

**Hal Wine**

Hal Wine is a programmer familiar with both the Windows and Macintosh environments. In his many years of experience, he has worked in most of the important areas of computing and for many of the leading computing companies.

The programmer on a multimedia team is called on to perform a number of tasks, from assisting producers in organizing their code more effectively to enhancing the production and playback tools. The most important
skill a multimedia programmer can bring to a team is the ability to quickly learn and understand systems—and not just understand the various calls, but know why those calls are needed. In other words, you should be able to read between the lines of the technical manuals, so that your solutions are harmonious with the philosophy and intent of the system designers.

Multimedia products are displayed on a large variety of display systems, and the enhancement needed often requires going behind the normal system safeguards to meet the objective. Such programming requires a thorough understanding of the target operating system and the device capabilities needed to produce a robust solution.

While multimedia authoring tools are continually improving, they are also still evolving. Many times a producer will want to do something slightly beyond the built-in capabilities of the tools, and the programmer will build extensions to the authoring and presentation suite in order to add the desired capability or effect.

Many of the workers on a multimedia team have come to computing from a background in another discipline such as graphic art or journalism, and while they may have strong creative skills, most can benefit from learning more about computing techniques. Often, a multimedia programmer acts as a teacher and technical coach to the team. This implies having better than average communication and comprehension skills, both verbal and written, and the ability to listen!

I often come in to handle “emergencies” in multimedia projects, rather than participate in the whole project’s life cycle. This provides me with maximum variety in my own work, which really keeps me on my toes. Sometimes, I’ll be working for several clients simultaneously. The downside is that I miss out on a lot of the creative synergy; but even so, coming in on the spur of the moment, trying to understand the parameters of the problem, and producing robust solutions quickly leads to quite a bit of creativity, too. Knowing how to make your own latte is also useful.

**Interactive Programmer** (HTML, JavaScript, Flash, PHP, and C/C++)

- Thorough knowledge of ActionScript, JavaScript, Flash, HTML5, PHP, and C/C++, Macintosh and Windows environments required.
- Must have working familiarity with digital media, particularly digital video.
- Must have a demonstrated track record of delivering quality programming on tight schedules.
- Must function well in fast-paced, team-oriented environment.
- Knowledge of AJAX methodologies desired.
Producer of Multimedia for the Web

Web site producer is a new occupation, but putting together a coordinated set of pages for the World Wide Web requires the same creative process, skill sets, and (often) teamwork as any kind of multimedia does. With a little effort, many of us could put up a simple web page with a few links, but this differs greatly from designing, implementing, and maintaining a complex site with many areas of content and many distinct messages. A web site should never be finished, but should remain dynamic, fluid, and alive. Unlike a DVD multimedia product replicated many times in permanent plastic, the work product at a web site is available for tweaking at any time.

Kevin Edwards

Kevin Edwards is Senior Multimedia Producer for CNET, a publicly traded media company that integrates television programming with a network of sites on the World Wide Web. In both types of media, CNET provides information about computers, the Internet, and future technology using engaging content and design. CNET has about two million members on the Internet, and its television programming—which airs on the USA Network, on the Sci-Fi Channel, and in national syndication—reaches an estimated weekly audience of more than eight million viewers.

Years ago I headed out to San Francisco to join CNET. I wore a lot of different hats at CNET, but my primary responsibility was with the company’s online foray into multimedia. For example, early on we did a year-long project with Intel, where I was involved from original concept through implementation. The project merged hot media properties with cutting-edge technology to create a brand-new experience in web-based browsing, allowing users to become participants in the experience rather than just observers.

What helped me keep this project in focus was my well-rounded knowledge and ability to perform in all of the different roles required to produce the site—whether graphics, HTML, editorial, support, audio/video, or some other task. While it’s a lot of fun to change hats and do many different tasks, it can be a lot of responsibility and pretty stressful. For me, building the original site meant that for a year and a half I was totally plugged into the Net, checking on our site, looking at stats, and analyzing what was going on in the entertainment/technology industries. This meant keeping Web profession hours rather than banker’s hours, which meant it was pretty rare for me to take a day off, even on weekends, and my office became more of my living space than my apartment. To keep from burning out, you have to have a sense of ownership and a passion for what you’re doing.
The best situation is when your team is composed of people who also turn into close friends. During this project we worked incredibly well together: each knew his or her particular field 100 percent and respected the other team members. We worked hard, played hard, and were able to really rock when put to the test. In fact, there were a couple of people who started the project with very little experience, but their eagerness and ability to learn, and the group’s willingness to teach, made it happen.

**Web Site Producer**  Excellent full-time opportunity with a large manufacturing firm. Responsible for developing Web projects from concept through implementation for internal and external clients. Interact with all levels of management, network teams, and development teams to provide efficient project solutions. Knowledge of HTML coding of tables, frames, and forms, knowledge of CGI scripting, and knowledge of Photoshop and Flash required. Exciting opportunity for a self-motivated individual looking for a career in new media. This new entry-level position in the firm’s national marketing department requires a team player with creative ideas who is interested in gaining experience and knowledge in every aspect of web site development. Job responsibilities include maintaining/updating site content, managing documents, and developing new site features.

**The Sum of Parts**

Successful multimedia projects begin with selecting “team players.” But selection is only the beginning of a team-building process that must continue through a project’s duration. Team building refers to activities that help a group and its members function at optimal levels of performance by creating a work culture that incorporates the styles of its members. You should encourage communication styles that are fluid and inclusive, and you should develop models for decision making that respect individual talents, expertise, and personalities. This isn’t easy, but repeated studies have shown that workgroup managers with well-developed team skills are more successful than managers who dive headlong into projects without attention to team dynamics. Although it’s usually a project manager who initiates team building, all team members should recognize their role; gentle collaboration is a key element of successful projects.

Currently, the Bureau of Labor Statistics does not have a category for jobs specific to multimedia. Some related areas listed by the bureau include:

- Artists and related workers
- Multi-Media Artists
- Animators
- Designers
- Motion picture production and distribution
Television, video, and motion picture camera operators and editors

Writers and editors

You can also check out career information sites such as SkillsNet.net, Vault.com, and WetFeet.com for current information on careers in new media.

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**Graphic Designers**

Graphic designers—or graphic artists—plan, analyze, and create visual solutions to communications problems. They find the most effective way to get messages across in print and electronic media using color, type, illustration, photography, animation, and various print and layout techniques. Graphic designers develop the overall layout and production design of magazines, newspapers, journals, corporate reports, and other publications. They also produce promotional displays, packaging, and marketing brochures for products and services, design distinctive logos for products and businesses, and develop signs and signage systems—called environmental graphics—for business and government. An increasing number of graphic designers also develop material for Internet Web pages, interactive media, and multimedia projects. Graphic designers also may produce the credits that appear before and after television programs and movies.

The first step in developing a new design is to determine the needs of the client, the message the design should portray, and its appeal to customers or users. Graphic designers consider cognitive, cultural, physical, and social factors in planning and executing designs for the target audience. Designers gather relevant information by meeting with clients, creative or art directors, and by performing their own research. Identifying the needs of consumers is becoming increasingly important for graphic designers as they continue to develop corporate communication strategies in addition to creating designs and layouts.

Graphic designers prepare sketches or layouts—by hand or with the aid of a computer—to illustrate their vision for the design. They select colors, sound, artwork, photography, animation, style of type, and other visual elements for the design. Designers also select the size and arrangement of the different elements on the page or screen. They may create graphs and charts from data for use in publications, and they often consult with copywriters on any text that accompanies the design. Designers then present the completed design to their clients or art or creative director for approval.

In printing and publishing firms, graphic designers also may assist the printers by selecting the type of paper and ink for the publication and reviewing the mock-up design for errors before final publication.

Graphic designers use specialized computer software packages to help them create layouts and design elements and to program animated graphics.

Graphic designers sometimes supervise assistants who follow instructions to complete parts of the design process. Designers who run their own businesses also may devote a considerable time to developing new business contacts, choosing equipment, and performing administrative tasks, such as reviewing catalogues and ordering samples. The need for up-to-date computer and communications equipment is an ongoing consideration for graphic designers.

Chapter 8 Review

Chapter Summary

For your review, here’s a summary of the important concepts discussed in this chapter.

Identify the typical members of a multimedia project team and describe the skills that they need for their work

- The project manager is responsible for the overall development and implementation of a project as well as for the day-to-day operations.
- Instructional designers make sure that the subject matter is clear and properly presented.
- Interface designers devise the navigation pathways and content maps on screen that let the user access or modify that content.
- Information designers structure content, determine user pathways and feedback, and select presentation media.
- Multimedia writers, sometimes called content writers, create characters, action, and point of view—and they also create interactivity.
- Multimedia video specialists must know the basics about shooting good video, and be thoroughly familiar with the tools and techniques used for digital editing on computers. They also must understand the potentials and limitations of the medium, including interactivity, how it will affect the video, and how these limitations affect the video production itself.
- Audio specialists design and produce music, voice-over narrations, and sound effects. They may also be responsible for locating and selecting suitable music and talent, scheduling recording sessions, and digitizing and editing recorded material into computer files.
- A multimedia programmer or software engineer uses an authoring system or programming language to integrate the multimedia elements of a project into a seamless whole. Sometimes programmers need to build extensions to the authoring and presentation suite in order to extend the system’s capabilities.
- Web site producers not only put together a coordinated set of pages for the World Wide Web but also constantly coordinate updates and changes.

Understand the importance of selecting and managing a team in order to produce successful multimedia projects

- In any project, including multimedia, team-building activities improve productivity by fostering communication and a work culture that helps its members work together.

Key Terms

- audio specialist (250)
- information designer (243)
- instructional designer (243)
- interface designer (243)
- multimedia designer (244)
- multimedia programmer (251)
- multimedia skill set (240)
- producer (253)
- project manager (241)
- scriptwriter (246)
- subject matter expert (242)
- team building (254)
- video specialist (248)
**Key Term Quiz**

1. The diverse range of abilities needed to produce a new-media project is called the _______________ (three words).

2. The person responsible for overall development and implementation of a project, as well as for day-to-day operations, is the _______________ (two words).

3. The most appropriate title for the people whose job it is to look at the overall content of a project, create a structure, determine the design elements, and assign media to the content is the _______________ (two words).

4. The work of a(n) _______________ (two words) is best when it is “transparent”—as in never noticed by the user.

5. The most appropriate title for the person whose job it is to devise the navigation pathways and content maps is the _______________ (two words).

6. The most appropriate title for the person whose job it is to structure content, determine user pathways and feedback, and select presentation media based on an awareness of the strengths of the many separate media that make up the total multimedia is the _______________ (two words).

7. The most appropriate title for the person whose job it is to create characters, action, point of view, and interactivity, as well as write proposals, script voice-overs, actors’ narrations, and text screens, is the _______________.

8. The most appropriate title for the person whose job it is to integrate all the multimedia elements of a project into a seamless whole using an authoring system or programming language is the _______________ (two words).

9. Activities that help a group and its members function at optimal levels of performance by creating a work culture that incorporates the styles of its members is called _______________ (two words).

**Multiple-Choice Quiz**

1. According to a recent study of occupations, which of these professions is *not* among the most respected professions in the United States?
   a. computer scientists
   b. physicians
   c. lawyers
   d. dentists
   e. all are among those listed

2. At Microsoft Corporation, the product manager:
   a. coordinates the project’s internal resources
   b. represents the product to the outside world
   c. oversees the entire team
   d. acquires the assets used in the project
   e. ensures the project does not go over budget

3. Which of these is *not* likely to be the responsibility of a project manager?
   a. managing the overall development and implementation of a project
   b. overseeing budgets, schedules, creative sessions, and team dynamics
   c. acting as the “glue” that holds the project together
   d. understanding the strengths and limitations of hardware and software
   e. developing extensions to the authoring system
4. Which of these is not likely to be the responsibility of a multimedia designer?
   a. creating interfaces
   b. creating budgets and timelines for the project
   c. ensuring the visual consistency of the project
   d. structuring content
   e. selecting media types for content

5. A multimedia designer might also be called:
   a. a digital media engine
   b. a pixologist
   c. an information designer
   d. a meta-data designer
   e. a media integrator

6. From an interactive standpoint, many multimedia projects are too:
   a. interactive
   b. fast-paced
   c. game-like
   d. passive
   e. complex

7. An interface should:
   a. be “transparent” to the user
   b. provide control to the people who use it
   c. allow the user to move about within the project
   d. provide access to the “media” in the project
   e. all of the above

8. From a visual perspective, interface design most closely parallels:
   a. mapmaking
   b. cinematography and film editing
   c. technical writing
   d. fine art
   e. technical drawing and illustration

9. Interface designers should:
   a. be familiar with film editing
   b. know an authoring system
   c. have basic drawing skills
   d. know how to do user testing
   e. all of the above

10. Multimedia writers are typically involved in writing all of the following except:
    a. proposals
    b. script voice-overs
    c. actors’ narrations
    d. authoring-language scripts
    e. text screens to deliver messages

11. Writing for multimedia can be more difficult than writing for other media because:
    a. character development is much more critical
    b. the dramatic structures of multimedia are much more confined
    c. multimedia development cycles are much shorter
    d. writers must think in smaller, more discrete and interconnected units
    e. all of the above

12. Which of these is not a necessary capability for a multimedia video specialist?
    a. skill in managing all phases of video production
    b. familiarity with the tools and techniques used for digital video editing on computers
    c. ability to incorporate all the sophisticated video effects into a multimedia production
    d. ability to make a video look larger than it really is
    e. familiarity with interactivity and how it will affect the video

13. Which of the following is probably not a consideration of the multimedia audio specialist?
    a. the sampling rate at which the audio will be delivered
    b. how much space is available for all audio
    c. which authoring system or programming language to use
    d. locating and selecting suitable music and talent
    e. digitizing and editing recorded material into computer files
14. The most important skill a multimedia programmer can bring to a team is the ability to:
   a. quickly learn and understand systems
   b. control peripheral devices such as laserdisc players
   c. manage complex timing, transitions, and record keeping
   d. coax extra performance from multimedia authoring and programming systems
   e. act as a teacher and technical coach to the team

15. Producing multimedia for the Web is different from producing for DVD because:
   a. the Web development industry is much more focused on sales and marketing
   b. Web development is much better adapted to larger, longer media
   c. Web design is much closer to print design; multimedia is more like film
   d. Web interface design is much more complex than DVD interface design
   e. a web site is never finished, but is always available for changes

Essay Quiz

1. Discuss why the multimedia skill set is different from other project skill sets.

2. List and define the skills in the multimedia skill set. Describe several ways of categorizing the skills; for example, how each skill is related to project management, to design, to media, and to programming.

3. Describe the skills related to organizing, structuring, and editing the information in a multimedia project. What are the various titles within this category, and what are the distinctions among these skills?

4. Define multimedia computer programming. How does the programmer fit into the team? Is he or she at the end of the process, simply putting all the parts together after everyone else is finished? How can the other skill sets benefit from understanding what the programmer does, and the authoring tools he or she uses?

5. Why are multimedia projects most frequently performed by teams? Whose responsibility is it to ensure that the team operates effectively? What can be done to promote team effectiveness?

Lab Projects

Project 8.1
Locate three multimedia projects and review the credits. How many members were on the team? What were their titles? How many team members performed more than one role? What tasks were “outsourced” (performed by outside companies)? Make a table that compares the titles for similar roles among the three projects. For each one, discuss how the team related to the product. (For example, if the product included original video footage, how large was the video production team?)

Project 8.2
Locate three web sites and locate the credits (sites should be large enough to have a professional web development team). How many members were on the team? What were their titles? How many team members performed more than one role? What tasks were “outsourced” (performed by outside companies)? Make a table that compares the titles for similar roles among the sites. For each one, discuss how the team related to the site.

Project 8.3
“Easter eggs” are small features hidden in web sites, games, and other software. They often include personal information about the development team that produced the project. Do a search for Easter eggs on the Web, and try to locate several. Describe what you find there. What do these hidden features say about the team that worked on the project?