10

Selecting the team

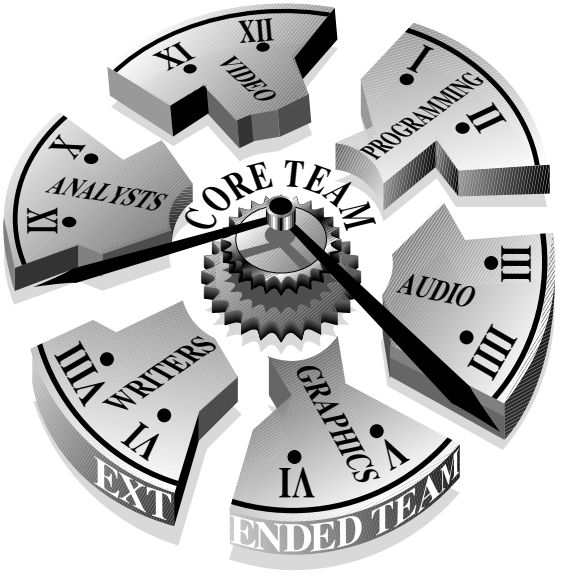
Project manager's responsibilities

- To match the skills needed to the project requirements
- To check the in-house resource availability – align the requirements
- To determine the roles and responsibilities of the core and extended team
- To interview and select all key team members if necessary
- To establish a list of criteria for each role
- To ensure that the company's policies on contract terms and conditions are carried out
- To ensure that the correct rights and clearances are made
- To provide clear and detailed briefs to those employed

Introduction

Although the selection of staff was touched on in Chapter 3, *Scoping a project*, the consideration there was to demonstrate how to assess the cost of the project rather than the skills, but these two happen in unison. The aim of this chapter is to give a more detailed account of the staffing decisions, and to demonstrate the complexity of the process. You need an appreciation of skill sets across several disciplines to be able to match your project needs to personnel requirements, while balancing the cost of the resources against the needs.

Identifying the skills needed



The mix of skills needed for any project depends on its content, use of media components, size, platform, and amount of administration. As project manager, it is your responsibility to ensure that resources are available at the right time to keep the project on track. This means that you plan who you need at which points of the project, and then ensure that:

- these resources are on hand;
- they are properly inducted into the project;
- they have been contracted under the right terms and conditions;

- they have the right skills for the job;
- they have the right tools for the job;
- they have a good working environment.

Because of the nature of multimedia, there is often a core team who work together for the majority of the project and then an extended team who are brought in for particular tasks – a video editor or a specialist in CGI programming, for example. The core team may well be full-time staff members from the company, but because the workload fluctuates according to demand, or projects can be long and complicated and therefore lock people into a timeframe, quite often it is necessary to contract-in people to form part of the core team.

According to the company you work for, you may be expected to carry out the interviewing process or there may be a specific personnel role in the company to take care of the search and selection process. In either case it will pay you to define the skills and experience level you need to make sure that you staff the project correctly.

Once you have a feel for the scope of the project and the expectations of the client, you should be in a position to identify the staff needed. Your decisions at this point affect the budget decisions and the costs. You need to assess the position for a core team first by matching the core skills you need with the availability of the nearest match to these in-house.

Once the client has agreed to the proposal, you have to move fast to assemble the team. Situations change quickly. Even though a few of the core team appeared to be available at the time the project was scoped, they might have been placed on another project if the go-ahead for that came first. This can leave you with the difficult task of recruiting very quickly to ensure that the project begins on time. Any delay can be vital to achieving the deadlines, so this is another dangerous time for the project manager – the time between a proposal and confirmation – because some of the circumstances may have changed.

Many companies try to build some flexibility into their organization by having a list of independent contractors that can be brought in for specific projects. A project manager needs to work up a good set of contacts across all the multimedia sectors to help the recruitment process. There are agencies that specialize in multimedia and/or Web design recruitment, and some companies use these to help construct teams. Remember that if you will be using an agency to help, you need to budget for their fees as well as for the staff costs.

Whatever way your company works to solve its staffing needs, someone has to do the interviewing and make the final decision. It is wise to become involved in this process to build up your own skill set. It is not an easy task, and is very time-consuming, but unless it is carried out effectively you could be landed with a poor team for a difficult project.

Your project teams might include the following roles.

Online core team:

- one or more graphics artists/creatives,
- one or more HTML or JavaScript authors (often the graphics artists also do this),
- yourself as a producer/project manager.

Offline core team:

- one or more programmers,
- one or more graphics artists,
- yourself as a producer/project manager.

Extended project team:

- server-side programmers (for online projects)
- video personnel
  - a video director/producer
  - an assistant producer
  - a production assistant
  - a video editor
  - a video journalist
  - a video graphics artist
  - actors/actresses
- sound personnel
  - voice-over artistes
  - sound editor
- general support
  - a personal assistant
  - secretarial support.

Specialist support

- business analysts
- information analysts
- technical analysts
- technical support
- an interface design specialist (GUI or HCI background)
- scriptwriters
- a training analyst
- an instructional designer/interactive designer
- subject matter experts.

On top of this it may be custom and practice in your company that there are one or more managerial people – such as a creative director – who are involved as well.

Because some multimedia specialists have built up experience across a range of skill sets, one person might be able to take on a couple of roles. But when exactly do you need any of these roles, and how do you assess whether you need them? The profile of each skill set and the type of project that warrants their use will be defined to help decision making about resources.

Considerations for interviews: general

It is as well to remember that interviews are a two-way process: you are assessing the candidates, but they are also assessing you and the organization. It is better if a couple of people can attend the interview so that impressions can be consolidated through discussion and comparison. Those interviewing should have:

- established what to say about the company and the project to introduce the candidate to the set of circumstances, the requirements and the set-up;
- established a set list of questions to ask all candidates;
- established the skill criteria needed, and have thought of ways to assess whether the skill set is present at the levels required;
- defined the role needed with the level of responsibility;
- gained an impression of the candidate from pre-reading a CV;
- formulated extra questions specific to the information contained in the CV to ascertain:
  - the accuracy of the information,
  - the reasons for any apparent discrepancies or breaks in employment,
  - the strengths and weaknesses of the candidate;
- put a timescale on the number of minutes to be given to each section of the interview and have appointed a person to be timekeeper;
- allowed a few minutes between candidates to discuss reactions and findings and make notes.

The interviews should start on time, and should progress according to plan. If the plan overruns, any waiting candidates should be kept informed of progress. Some people have the same reaction to interviews as they do to examinations, and it is not an ideal way to form solid impressions. Some larger companies use group interviews for full-time jobs, where the candidates are set tasks to assess their abilities in a range of factors such as leadership, teamwork, and so on.

However, this is not a practice that prevails in multimedia at present. It is a good idea to allow members of the core team to meet candidates for other core team roles because they will need to work together. This can be done after the formal interview while the next candidate is being interviewed. The project manager should then collect any additional comments from the other core team members prior to making decisions.

Skill-set profiles: core team

Computer graphics artists

Quite often the HTML/JavaScript authoring for a website is done by the graphics artist or a web author rather than by a programmer, largely because the layout of the page is defined by the HTML. If WYSIWYG tools are used then they may also include basic JavaScript programming for things like rollovers. However for more complicated JavaScript programming, especially if it is important that the pages work on a number of platforms, a specialist JavaScript programmer may be needed. (See Book 2 Chapter 5, *Platform parameters*, for more on this.)

Websites and applications can demand a certain style because of the content, and ideally a graphics artist should be selected to bring the best to the content and to the interactive environment. The development platform and the delivery platform will dictate the level and skill set that are needed for the graphics artist. In the same way, these will affect the skill set needed for the programmer, as we shall see in the next section. The artists will come from either a PC or a Mac background and will have experience in the respective graphics packages and, if appropriate, in web page design.

The artist needs to be both creative and technically minded, since creative ideas in multimedia graphics have to be achieved through technical means. Many adjustments have to be made because the graphics process is not straightforward. Colours can shift quite often as the graphic moves through its various stages to the final image, and for applications where accuracy of colour is needed – selling items that have a range of colour options, for example – this can be a major problem.

The sizing and placement of images cause other problems. Text often becomes corrupted at the last stage. It is difficult for the client to realize how much rework is needed because the graphic may have to be taken back through numerous stages to correct such problems. The technicalities and inconsistencies mean that the graphics artist needs patience and logical, analytical thinking as well as creative flair. Your application may require more of one of these attributes than the others.

The programmer or HTML author and graphics artist have to work closely together. The graphics person constructs the images to a certain stage and then passes them to the programmer or author to integrate them with all the other pieces – sound files, text, position in the program, the

means of access to the image, and so on. They work out together exactly how to produce and transfer the images between them. In offline projects particularly, there are often hundreds of images and pieces of images that have to be assembled, so the naming convention for the assets and the version control between them is important.

Online projects make demands on the artists because they have to balance the size and quality of the graphics against the download times. They have to learn tricks of the trade to compress graphics with as little drop in quality as possible but with speed of transfer. Working across browser versions and cross-platform has become a lot more complex over the last couple of years and many companies are limiting their commitment as to how many and which options they will support.

Because people may have worked in various companies with diverse approaches to working, and have different ways of expressing concepts, bringing the core team together can be problematic. Some of the skills overlap, and the graphics artist might have been used to taking the image process further than the programmer expects, or might be used to liaising with clients directly when the project manager wants to avoid this. There may be a strong split between the technical and creative skills. A technical artist may depend on the source images being produced by conventional means and then they scan, adjust, assemble and integrate ready for the programmer. This will always be true for specialist areas such as cartoon images, for example. But if the artist has a strong technical bias, it will affect the resources and costs of the project if you do not recognize that one graphics resource will not suffice. Often this is the case where there is one main artist and input from others as and when needed.

You may find you have to work with an artist who is available in-house but who doesn't have the full skill set you need. The erratic availability of contractors can also mean that you may have to select a person who displays many but not all of the attributes you need. Then you will face decisions of how to build up the balance of skills according to budget.

The project may form part of a set of projects so several artists with a variety of skills might be needed. If there are several people they need to be managed, and a senior graphics artist could be appointed to take on this role, or an art director might be considered.

An art director (or creative director) is usually employed by larger graphics studios as the creative ideas person who is responsible for managing the overall style of projects. You may have a set of projects that need to show continuity of graphic style – a certain look and feel. Also, if you have several computer graphics artists involved in your project, someone needs to coordinate the artistic direction and personalities.

Pre-interview

Although there is usually one main artist for the project, you may need several for different functions during the development, particularly with

offline projects. You'll need to define exactly how you intend the project to run with any split of work needed between graphics artists, for example, so that there are no misconceptions about what type of work each artist will be doing. Some tasks are more laborious than creative, and tensions can occur if an artist thinks he or she will be doing creative new work rather than repetitive conversions from source materials. The size of the project will determine whether these tasks are combined for one person to do or whether the tasks are split. Also, one person needs to have responsibility for artistic direction, otherwise clashes in opinions, style and approach will show up in the application.

At interview

The definition of roles is easy to state but difficult to achieve because you will be working blind until the fine detail of the project is teased out: so you can explain to candidates how the graphics appear to split but remind them that the circumstances may change once the project is under way.

It is important to see examples of the candidates' work and understand exactly their role in the production process, whether technical, creative, managerial, or all three. Graphics artists will be happy to discuss their preferences and styles, and might be able to come up with a feel for some treatments for the project once they understand its scope and their expected role. Because interactive graphics production is not straightforward it is a good idea to probe where the candidates have experienced problems and how these were solved. This will give you a feel for the depth of experience and knowledge of the idiosyncrasies of the graphics packages.

You may be working on a project that has a 'house style', and this might mean that the artists will need to adapt their style appropriately. Some find this easier than others, so you should check their disposition for this.

Because the synergy between the programmers or authors and graphics artists is important, it is good to allow them to meet if possible and get their reactions. If the contractors have worked for the company before, it is also wise to gather informal feedback from those that worked with them.

Programmers

This section applies both to programmers as members of the core team for offline production and to their role in the extended team for online production.

The skill set of programmers is wide-ranging. As project manager, your programming resource will be affected by decisions on:

- the development platform;
- the software that will be used for development (authoring, scripting or computer language);
- the delivery platform considerations.

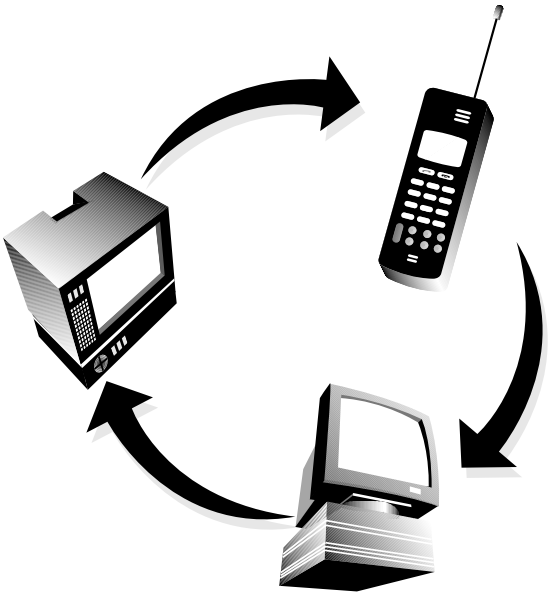
You need to understand what hardware and software you will use in the project to help pinpoint the exact skill set needed in your programmers.

The first major decision may be the development platform that your project will use – Mac or PC, for example. Programmers specialize at this level and then have specialisms within these main groups. There are other development platforms, such as Linux or UNIX, but these are less common apart from server-side development for websites. Often the company will decide which development platform is used. Under the Mac and PC categories there are different sets of authoring tools, although the most common tools are available on several platforms. These packages allow programmers, and non-specialists who have programming aptitude, to develop straightforward applications. You need to have a good understanding of what the tools allow, or take advice from your technical support, to decide whether the tools can fit all the project requirements.

Authoring tools have become much more sophisticated over the past few years, and can cope with far more than they used to, but you need to become informed of their limitations and nuances. Some authoring packages have their own scripting languages. These allow the tailoring of the package to specific needs but add a level of complexity to the skill set needed. Scripting languages bridge the gap between authoring tools and computer languages. The difference in the levels is equivalent to prefabricated house segments (authoring languages), prefabricated building blocks (scripting languages), and constructing your own bricks (computer languages).

A further category of programmer is an analyst or systems analyst. This group have experience in defining the requirements for projects. They are the most likely to convert into project managers since they deal with clients and supervise other programmers to deliver the specification as well as having programming ability themselves. They will have been trained in using structured methods to specify and document computer projects. There are differences in the skill sets required for managing computer projects and multimedia projects, but this group will have a better starting point. The very formal approach to defining requirements by using a functional and technical specification as well as having a user requirements study is seen as over-complex and off-putting for clients in certain business sectors. The principles are sound, but the methods have to be adapted and extended for multimedia.

The application platform does not necessarily dictate the development platform, so a PC application may be authored in a Mac tool set, for example. Sometimes applications need to work across platforms, and this is where wider expertise is needed to ensure that the development takes account of the cross-platform restraints. Of course, developing for the World Wide Web is inherently multi-platform, as different browsers running on a variety of computers should be catered for. You have to be confident that the right decisions have been made about the choice of development hardware and software to fit the delivery platform requirements. If you are non-technical, you need to have complete confidence in the technical support staff and/or programmers who make the decisions on your behalf.



Cross-platform.

If the application cannot be developed in an authoring environment, a programming language will be needed. Although there are exceptions, non-specialists have not got enough experience and training to use computer languages so usually a specialist will be needed. Different languages suit different purposes and accomplish certain tasks better than others. This is why your technical support needs to understand the whole scope of the project to make an informed decision as to what combination of hardware and software will be needed.

Programmers can apply past experience to learn new languages/packages as they work. Some packages share similarities in approach so that the learning curve is relatively fast; others have a totally different approach to their logic, so they take longer to learn if the past experience is not compatible. Quite often the programmers you employ will have to learn as they go along, and you need to be aware of how much extra time you need to build in to allow for their learning. This might sound like poor project management – to employ the wrong skill level – but several circumstances can lead to this. First, you may have to use full-time members of staff with a lower skill level for your project because they are available and therefore it is cheaper for the company to use them than employ contractors. Second, some specialisms within programming are harder to find, and you may not be able to find contractors with the right skills. Third, when skills are scarce they become expensive, so even if you find the right contractors you may not be able to afford them within the budget. In this case you have to

gamble on the extra time for someone to gain the knowledge against the speed of experience. This would tend to mean the lower cost for longer or a higher cost for a shorter period of time.

This is a difficult decision, since estimating the time it takes for programming is not an accurate art, particularly in interactive media development.

Considerations for interviews: programmers

Pre-interview

You need to have worked out the skills you want, the skill level you would be willing to accept and 'grow', the length of time necessary to complete the project, and the cost range you could work with within your budget. Ask candidates to bring examples of their work.

At interview

There are good and bad traits within professions that are part of their 'folklore'. Programmers can be creative, versatile, act on initiative, quick thinking, adaptable, precise, accurate, work to timescales, and reliable. However, the profession suffers from labels from the business world that indicate erratic timekeeping (both personal and project specific), poor communication skills, stubbornness, a wish to fulfil themselves rather than the project in hand, and a tendency to be wilful, seeming to live in a world of their own. The problem is that some of the best programmers are not easy to manage.

You have to decide whether solidity or finesse is needed more in the particular project if you end up with a choice of candidates who display different traits, and you need to recognize your own strengths and weaknesses in your management style to assess a fit within your team that you can manage successfully.

If you are technical, you could conduct the interview to assess the technical ability of the candidate. You also need to assess the candidate as a project member. You may well be looking for different attributes than in a full-time employee. Project-specific work can make it easier to manage a more diverse range of people than those you need to work alongside continuously. In a project-specific situation, the expectations are different for all involved.

The extended team: skill sets

Video personnel

The use of video in online applications is growing. When a company's image or the information about a key product – a new car, for example – warrants high exposure, or indeed needs to match the exposure level employed in

other media, then the pressure mounts to include video despite the restrictions of quality and download times.

At present the shooting of video specifically for online use alone is unusual, and so video production follows offline production paths, and extracts might be used online as well as for other purposes. Another scenario where video plays a part is when a website precipitates alternative media arising from it. So a marketing CD or DVD might well use extracts from the existing website, but because CDs and DVDs set up expectations in the users for audio and video, extras might need to be produced for them. In the case of hybrid Web/CD/DVDs the strengths of each medium are utilized, since the volatile data is kept online for ease of updating while the rest is encapsulated on the disk using an appropriate media mix.

What does this mean in terms of the skill level needed for video online production? It may mean that you need only the expertise to edit and compress extracts of material already produced, to provide online pieces of the best possible quality. Alternatively, you may need to employ a crew to produce major pieces for a hybrid Web/CD/DVD, where stills might be used on the website for continuity of style between the Web and the disk. In between these, for iTV perhaps, you might decide that a video journalist who shoots directly with a digital camera, records commentary and edits items on computer would have all the right skills you need to produce pieces for the particular project. This all-in-one approach is common only for news and some documentaries at the moment but its use may develop in other sectors.

The variety of video that can be appropriate means that you have to recognize and set the quality level of production and the attendant skills needed carefully or your budget can quickly go astray.

If your offline application is going to include video footage, you might need to use a video director/producer, an editor, and perhaps a video graphics artist too. The directors/producers will have contacts and preferences for using certain facility houses, editors and video graphics people, so it may save you some effort if you trust your main video contractor to organize the other video needs. Again, depending on the company bias, you may have access to all the video personnel you need in-house.

The difference between a video director and a producer is not straightforward until you define the roles for a full feature film, where the director has the creative role and the producer is more of an administrator. For shorter pieces of work you need to check what a person will be prepared to do if you interview directors and producers, so that you are aware whether they will collapse the roles together, or whether they expect support themselves. A lot will depend on the amount and type of video footage you require.

As video has become more of a key component in applications, the traditional roles from video production will figure more in multimedia teams. The rise of iTV will play its part in extending the traditional skills too. Production assistants have had a key role in video productions, helping the

Use of video is increasing.

director and producer. The role involves organizing and administration, but can extend to supervising edits, directing part of the shoot, clearing rights, organizing facility houses, and editing scripts. A good production assistant is well organized, used to troubleshooting, well skilled in audio and video production, and has a useful range of contacts.

Personnel with a video background find the seeming disintegration of pieces of a script and the lack of control over the user's sequence of using the material an anathema. Their backgrounds have prepared them for continuity, flow, strong storylines, methods of story development, build-up, characterization and unity of a whole. They lead the viewer through the material. Interactivity destroys this to a certain extent, and it takes time for traditional directors and assistants to come to terms with the changes that are needed in material development. They have a tendency to be critical about the technical quality and the structure of interactive programs that they have seen because they compare them with video programmes. Chapter 16, *Multimedia narrative*, later in the book, looks at the implications of interactivity on the traditional approaches to writing scripts for film and video. It anticipates the skills being needed in iTV.

Although the addition of interactivity and working with programmers is a new area, video personnel are used to dealing with a mix of materials and people. It is possibly a little harder for those coming from a programming background to pick up the creative aspects of audio and video production than it is for video personnel to adjust to interactivity; but it is easier for them to learn the technicalities of audio and video production than it is for video personnel to understand computer graphics and programming technicalities. This might mean that some personnel from a computing or graphics background will claim to have audio and video production skills. You need to decide whether these people have full creative, administrative and technical skills or whether audio and video specialists are needed.

Assistant producers help the producers with the creative direction of the video footage. The producer may delegate some of the responsibility for shots and edits to an assistant but still maintain a strong directional line. This means that some assistants have a wide range of skills and are capable of directing smaller projects. You may decide that an assistant producer could fulfill the role you need, depending on their experience. It would be rare in multimedia to need both producer/director and assistant producer.

Production assistants can be invaluable when a project needs video footage, photos or pictures from picture libraries, clearance of video, sound and graphics rights, or if several strands of the project need to be completed simultaneously because of the timescales. They have an administrative role supporting the director and producer.

The casting and directing of actors and actresses might form part of your overall responsibility. If your footage needs extensive detail such as external locations or studio sets you will need a full production team. This is why and where video footage is expensive and might take up a good portion of your budget. The producer would usually coordinate, recruit and manage the video team, and take care of casting, but you may have to sit in with the client to check that the actors and actresses fulfil their expectations and needs.

So much depends on the scope of the project and the budget that the number of people involved and their roles is difficult to quantify. Multimedia at present tends to expect people to collapse a few roles and responsibilities together because the amount filmed is generally shorter and less complex than for full videos and films.

Sometimes, and this is true for on- and offline projects, you might find yourself in the position of selecting and organizing facilities houses and personnel, such as video editors, to work on pre-shot footage. Your need for a producer or director diminishes in this case, but you still have to clear the rights and re-edit the material to suit the purpose.

Video editors work to directions, so if your application needs existing footage reworked you need to consider whether you can handle the direction or whether you need help. This could depend on your own background and experience and whether the scripts are straightforward. Alternatively, the editor might be prepared to work with the scripts without direction. The

range of possibilities within video production and the variety and level of skills within the personnel mean that identification of which personnel are needed and recruitment are much easier with someone who has been part of the industry.

The use of digital video has brought video and computing editing skills closer. Digital footage can be edited on a computer desktop, and even in broadcast production, desktop systems are used for the early offline stage of editing. You might produce your video using broadcast facilities, in which case you will hire these facilities complete with their personnel, and the editing is not really a team-recruitment issue. If you are going to make use of in-house desktop editing for your production then you will need to have a team member who is able to do the work from both a technical and creative point of view. This might be something that a graphic designer can do, especially if the video editing is combined with compositing work, where moving sequences are combined together. Your decision whether to use an edit suite or your own computer could be influenced by cost, personnel abilities, timescale, and the complexity of the editing. However, the creative processes involved with the choice of which edits and video effects will suit the material best are skills that still reside more with video personnel than with computer personnel, although the skill sets are converging.

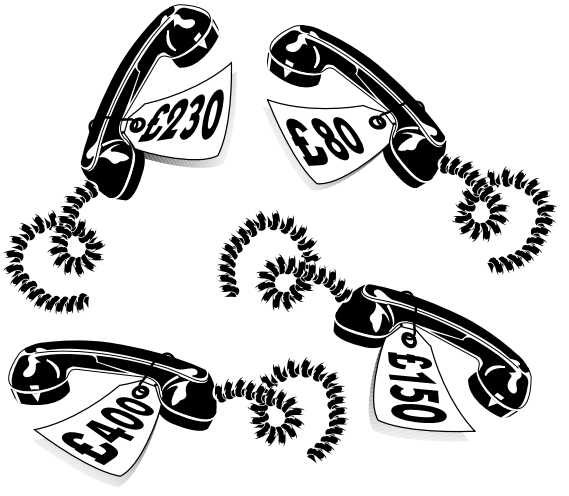
Sound personnel

The production of audio for a website is basically the same as for an offline application. As with video, some of the production can be done at your desktop.

If you are using audio with graphics and text, you will need to:

- book a studio facility with a sound editor;
- select and book your voice-over artistes;
- select any music needed;
- have all the scripts ready and signed off;
- specify exactly the format in which you will need the material.

You will be asked how long you'll need the studio and editor for, so you have to make sure that you know how much work is involved in the scripts and estimate the amount of time needed to edit the material afterwards. You have to work out the timing sequence of all these aspects so that they come together at the studio. Selecting the voice-over artistes is no trivial task. You'll more than likely have to go through an agency. Your company may hold banks of voice-over tapes from different agencies that you can browse, you may have a voice in mind and need to find out the agent, or you may have specific requirements for voice qualities and need to match them to people. You can phone agencies and put your specifications to them; they will suggest some alternatives, and then send through some demo tapes.



Different prices from different agencies.

The voice-over industry is well structured, and is used to responding quickly to enquiries. The agencies have several questions about use of the voice-over that determine the basic rate for the artiste and any clearance and rights fees. For non-interactive productions the negotiations are straightforward and clear. They are based on the type of use, type of audience, period of time, and countries for clearance. One of the standard categories that was used – the number of times for broadcast or use – is impossible to predict for interactive media and did cause some headaches for a few years, since the user may or may not access the particular voice-over every time. Because interactive use is now widespread many of the initial difficulties met clearing interactive rights have been addressed and rates are more standardized for a website, kiosk, CD-ROM, DVD or whatever.

It is up to you as the project manager to check that the rates and rights offered match what is needed. Production music recorded specifically for use in film, television and multimedia is available from many sources, and in some cases it is royalty free.

If you are employing production assistants, it is invaluable if they have had prior experience with clearing multimedia rights. As it is an area that is constantly shifting, and the regulators are trying to address the problems, you need to keep up to date with the changes either through them or by yourself.

Voice-over artistes work quickly. They often have sessions before and after yours, so if you have miscalculated the amount of material, or there are too many changes, you will be looking at the hire of all concerned again. The artistes usually charge a minimum of an hour however little they say.

The sound editors will use a variety of techniques to deal with any retakes that are necessary because of mispronunciation, wrong intonation or whatever. The way they choose to operate depends on the sophistication of the equipment they are using. Most studios are digital now rather than tape based and record direct to a computer file. If there are very specific subject terms, it is wise to have a representative from the client at the recording to check the pronunciation.

The artistes should have the script a couple of days before the recording so that they can prepare, although many are excellent sight-readers. The scripts need to have been signed off by the client prior to the recording. During the recording session the editor will mark up the script to show where there were retakes, but you or your delegate should also keep check and decide which out of any that are disputed should be used. The client or their representative might prefer to make these decisions, but they have to be made then and there.

It is important that the editor knows what the tracks will be used for, and the quality level needs to be stated clearly.

Multimedia applications have underestimated the importance of the use of sound, as discussed in Chapter 8. This starts at the script stage, when speech and stills are often put together without the atmospheric use of music and sound effects. However, until the clearance and rights problems are sorted, the expense of quality audio might be too much for many projects, and it is easier to compromise on its quality than on many of the other components.

Audio production is a large administrative, creative and technical part of the project and carries its own risks, which the project manager needs to understand and control. A video producer or experienced assistant producer would have the skills to manage and coordinate the audio production as well as the video if necessary, but they would have to be made aware of the technical specification for the audio so that the next stage – encoding for the website, CD or DVD – can proceed smoothly.

Because the tools have matured quickly, it is becoming easier to encode them. It is so much easier now that graphics artists and programmers can shoot and record pieces of material, then integrate them without the need for all the personnel, studios and facilities houses. If your application needs only this level of quality, there is no reason to go to the expense of full-blown audio and video production. You still need to clear all rights and ensure that there are no accidental infringements such as advertisements on a wall deliberately used as a background in the video, or uncleared use of any music. There are lots of traps to avoid when this in-house approach is taken, and the creative personnel are often not aware of all the administrative angles that need to be covered for legal reasons. If this is the right approach for your project, you have to take full responsibility for ensuring that all the administrative procedures are carried out and recorded correctly.

General support

Personal assistant

If the administration in the project is going to be heavy, you may well need a personal assistant instead of or as well as a production assistant. The skills of organizing are parallel, but personal assistants will not get involved with the audio and video production to the same extent. They may book facilities, and arrange and clear rights under your direction if you will be performing these tasks. They should possess secretarial skills so that they can assist in documenting the project and collating scripts as well as contributing to the general communication with the client and team.

If the project is an international one, with all the administrative extras that this entails, a personal assistant may be the answer. If the project involves details of the client's products – a kiosk or a full online retail site, for example – it can be a large task to ensure that the information is accurate and in a form that will facilitate integration.

Clients will be used to changing their details on a daily basis until the products are on sale, and it is difficult to keep track of the current situation on prices, colour descriptions, product dimensions, product specifications, and so on. Unless the application links online to the client database as part of the project specification, you will most likely need to reproduce the details and get sign-off on a version at the time you need to do final integration. You will have to build up the relevant details and keep updating until the last moment.

This is one of those grey tasks that several people might do or share: an instructional or interactive designer might see it as a task to ensure the quality of data and be prepared to take this on; programmers might be persuaded to have this as part of their role, particularly if the technicalities of merging data from the sources can be streamlined; you might see it as part of your liaison and sign-off role; or you may set up a process between companies where your personal assistant will liaise with the appropriate people to maintain the records. A lot will depend on exactly how much data there is, how unstable it is, and how it will be integrated into the application.

The role tends to evolve according to circumstances and the aptitude of the people involved.

Secretarial support

All projects generate a good deal of general administration, and some level of secretarial support is always needed. If you have to type and produce all the documents and letters yourself, make all phone calls to book facility houses, and contact the various contractors, clients and officials, you need to block out at least half of your time for this and have other forms of backup support for the other functions to compensate. Lack of administrative backup is one of the most common causes of problems in multimedia

projects, because the amount of time it takes is underestimated and undervalued by managers. This is not a major problem if you do not have to perform several of the core tasks yourself on the project, but if you are expected to do part of the programming, perhaps produce a prototype with an authoring tool, cover all the liaising with the client, and maybe write a script or two while recruiting and managing all the other staff, then the day-to-day administration becomes problematic. This is where the value of being multiskilled can become diminished because it is considered the norm rather than the exception.

If you need to have support, you may be able to identify the busy administrative periods and survive with temporary secretaries. However, inducting people often eats up vital time, and so continuity of personnel across a project needs to be carefully weighed against other factors.

Project managers in other business spheres are not expected to perform any of the core tasks themselves. In many ways, the practical skills are seen as non-management functions and therefore not part of the role. Multimedia roles have not fully settled out yet so the boundaries are not as defined. But the profession is maturing even though it is still going through changes as the technologies change around it. Many more people have not converted through to new media from other areas but began and continue their careers within it.

Specialist support

Business analyst

Increasingly the top management of new media companies are recognizing that it is the initial stages of projects that can be the most problematic. These projects tend to be the larger ones and many are concerned with e-commerce.

Clients have become more informed and more demanding about the results they expect from these new media projects. Sometimes the clients will be fully briefed in their e-business strategy and have very clear business objectives for the project. But you may have difficulty buying in to their perspective because their business is specialized or their way of describing their business processes is peppered with concepts you are unsure of. Some companies have their own cultural stance that is embedded in their vocabulary and takes some time for outsiders to master. You may benefit from having a translator to bridge the gap between their 'business speak' and a new media brief. Having a business analyst who has experience of business practices on the one hand and technology projects on the other might lead to getting a faster working brief than you learning to understand the client's business.

On other occasions the clients' expectations can be unrealistic. They see new media as the answer to all their problems. Sometimes they confuse

what new media can achieve on its own and what else might need to change within the company to release its full benefit. If any of these are evident from your first meetings, you may save yourself and your team a lot of time and effort if you offer an e-business analyst or strategist with whom the clients can clarify their ideas. A good business analyst will help the clients produce a clear and realistic brief of what they want and what they say they need in terms of their business. Then you and your team can move forward with far more confidence.

The role of a business analyst or equivalent has become more prevalent as new media has become part and parcel of doing business. The Internet has matured into a key business and public communication channel so that businesses can't ignore it. New media has graduated to being a mainstream necessity. Previously it was marginalized and key business personnel were not often involved. Now new media decisions are part of core business, top management is involved. The decisions warrant attention because the overall performance of the company is linked with them.

There is a skills gap that needs to be recognized here. It is difficult to find business analysts that have a foot in both camps who can bridge the divide to get a clear brief. Clients are wary because some e-businesses have very visibly got things wrong and paid for it by going out of business. Successful e-business models are still eluding definition. E-business strategies are fledgling. This is part of the difficulty for the clients but they must reach their own informed decisions in the risk-filled arena. Your analyst has a difficult role and should not drive the client's business solutions. The analyst should interpret the clients' business solutions into a brief that you can produce with confidence.

☐ Information analyst/architect

An information architect may work side by side with the business analyst and identify the content range and treatment that serves the business strategy. They address the 'who, why, what, how, when and where' high-level decisions about information, its structure and the access within and outside the organization. The key aspect they are concerned with is determining the overall information structure blocks and ensuring that this serves the business in the way that it needs. (See Chapter 6, *Agreeing the content*, for more information about the role of the information analyst/architect and the references at the end for designing information architectures for websites.)

☐ Technical architect

When a project is complex, a good deal of code has to be developed and possibly integrated with other company systems to devise a smooth electronic supply chain. Then a technical architect may be necessary to act as the specialist to coordinate the in-house team and the client's technical resources.

The definition of the exact technical specifications that will be needed is no mean feat under these circumstances. Many e-commerce sites need extended technical considerations so a specialist can be invaluable.

Technical support

The day-to-day running of the technical side of the project can range from straightforward to very complex depending on the mixture of hardware and software that will be used. In some research and international projects your partners might be producing the hardware and software as part of the project, and you may be dependent upon their meeting their deadlines and testing the efficiency of the tools, prior to you using them. Inevitably with new hardware and software the unexpected happens, and it is at this stage that good technical backup is essential.

The company may have a technical director, a production manager, a network manager, a web master and technical assistants, or it may not. It is essential that any work on the project is properly backed up. The administration for the technical side of the project, such as registering software licences, general maintenance, chasing parts and creating backups, can be onerous.

You cannot assume that graphics artists and programmers will perform any administrative aspects unless these responsibilities are defined as part of their role. Depending on where they have worked, this might be considered normal or highly irregular. This is where a good definition of roles, responsibilities and general work practice pays off, because then no one makes any assumption. Very often, it is the assumption that someone else is doing something that suddenly provokes a crisis for the project manager.

The amount of technical support should increase according to the number and type of projects that the company has. If, however, your project warrants extra for the whole period or part of the time, this is yet another resource to nominate and budget for.

An interface design specialist

A GUI (graphical user interface) or HCI (human–computer interaction) specialist might be needed if and when the client demands a strong commitment to image and interface in the design proposal and development. This may arise as a reaction to criticism to an existing website, for example, or as a result of a major competitor adding a radical new look and feel to their website that has been received favourably by the users.

Often general graphics artists or interactive designers fulfil this function as part of their role and responsibilities but if the client wishes you to explain and show how the application will perform in terms of use according to the requirements of the end-users, a specialist will bring the right skill set to the team. The role of interactive designer has some overlap with these specialists but as the names imply, a GUI or HCI specialist brings more

precise expertise to the cognitive and perceptive elements of interface design and will employ specialist techniques to test what works and what doesn't, in an effort to refine the interface to the needs of the users.

Scriptwriters

Many scriptwriters could form part of the video personnel team if their experience lies in writing video scripts. If video scriptwriters are employed, they tend to work with the director or producer. But multimedia scripts, as we have seen, can combine any variety of audio, video, interactive instructions, interactive design, and text. You might find one person to write all the scripts for the project, or you might have to employ several for the different parts. Your prime concerns are to:

- maintain quality across the scripts so that every media attribute is used to best effect;
- ensure consistency of style;
- check that there is correct adherence to the overall interactive design;
- keep the scriptwriters on track;
- make sure the scripts keep to the size and specifications worked out for each section;
- determine that each script is technically achievable in the time and budget.

The precise content can take time to determine, and this can sometimes form part of the writer's brief; at other times the subject experts, interactive designers and/or training analysts will work to decide which issues need to be addressed and then work with writers to produce the scripts. The whole area of scriptwriting is one of the least defined in multimedia and therefore one of the hardest tasks to control for the project manager. As each piece of script is addressed, there is a tendency for the writers to want to add and expand the original ideas beyond the scope of the budget or beyond the space allocated for the section, and this needs to be contained. Experience of working with interactive scripts helps writers to understand the new constraints that have to be taken into account, but if they have little experience you need to monitor them closely.

Prior to interview, you need to define a brief to direct the writers. The brief needs to cover the content treatment needed, the scope, style considerations, the audience profile, the company profile, and the timescales. The briefing documents should be written and include as much detail as possible so that there is no misunderstanding later. If there is an overall interactive design, sometimes called the high-level design, the writers should be briefed to explain where and how their piece fits into the overall design. A structure diagram proves invaluable when discussing the project with most of the personnel involved, and always helps scriptwriters. They

will have a different approach if they know that they are not responsible for the whole program and will want to ensure that their piece fits the overall specification as well as the individual section brief.

If the writer is meant to take on a fuller role and produce the interactive design as well as the detailed scripts your brief will be different, and you will be checking for a more complex skill set. The type of application will direct the needs for designers and scriptwriters and the precise skills they should have. The script for an advertising agency's website, for example, would need to be very different from a medical education CD.

Training specialist

As already discussed, training has its own approach to defining content and scripts, so if the project is a training application you need to make sure that it conforms to the principles of the discipline. The training specialists you recruit would need to have had experience in training needs analysis if you expect them to define the overall scope of the content. Their role may stop there and the scriptwriters could take over; or, if the training specialists have interactive experience, they may be able to take the project through the next stage of high-level design. They may possibly be capable of writing some or all of the scripts themselves. A lot depends on the application and the experience of the training specialist. So-called 'soft skills' such as assertiveness, leadership and counselling are harder to recruit for than other training areas. You should be looking for a fit, in experience of the content, a match with experience in training analysis for a similar audience, and experience in developing interactive or distance learning materials.

You may find that you need to pair a training specialist with an interactive designer, subject matter experts and scriptwriters at different stages of the content development. If the application is an in-house training program for a large firm, this mix of people would be quite common. If the training specialists were from the client company, and you had to utilize their skills, they might have little or no interactive experience. Then your role would be to recruit enough support staff around them to help achieve the right mix of skills needed for this part of the project.

In developing intranet, Internet and/or hybrid Web/CDs for training, the appreciation of the strengths and weaknesses of the media plus the attributes of the different levels of interactivity that figure in each delivery platform are paramount. The purpose of the training has to be balanced with the way the information is structured. The range and structure of the training information will be affected by considerations such as whether tutor support is built into the package via e-mail, videoconferencing or whatever.

You need to select people for your team who have worked across all forms of training so that they appreciate how to use each element best in the delivery mix. The breadth of skill is difficult to find, and so more than one training specialist might be needed; or a mix of training specialist with

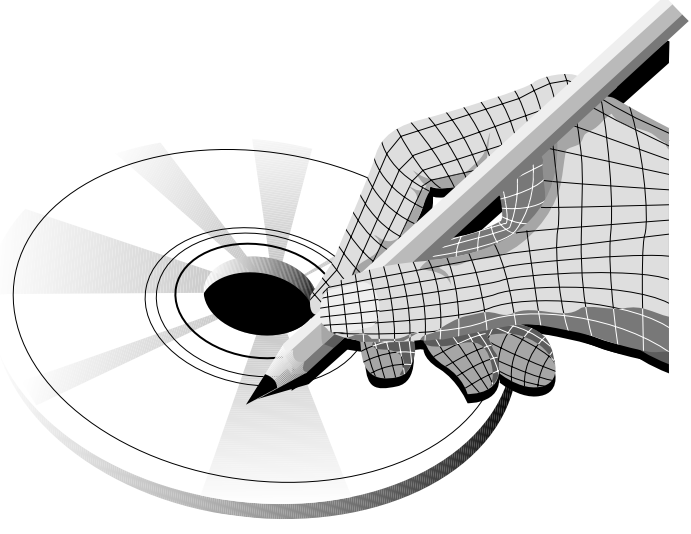
instructional designer/interactive designer – as defined below – might provide the solution.

Instructional/interactive designer

One of the key skills you are trying to cover is that of interactive design. Because this is bound up with defining the sections of the content, the interface, and the routing or navigation paths through the material, it spans several of the roles: programming, graphics, scriptwriting, producer, and interactive design. Your programmer or graphics artist may well be experienced in producing the equivalent of a high-level design but not scripts to support it. They may on the other hand not be very experienced or happy in liaising with clients to extract the salient information, and prefer building to a specification that they are given.

An interactive designer takes on some or all of the responsibility of defining content plus specifying the high-level design, and probably can write some or all of the scripts. The fine detail of the interactive design has to be negotiated between all the core team members because they all have relevant input to help shape the decisions. In this way, an interactive designer might sometimes be part of the core team.

If one of your core team, including yourself, cannot fulfil the functions of interactive design, you should consider recruiting an instructional/interactive designer. Other roles will be able to script for text, audio and



Interactive design.

video, but the 'Help' script for an offline application, which explains how the program works, may also include text, audio and video. This is often forgotten but is vital. It is unlike the other scripts in style and tone. It can be the key to a successful application. As applications are now more complex, the Help script is growing in size and importance. You need to determine whose responsibility it is to take care of this. Online applications can offer direct contact with people for support via the medium, but how this is set up and maintained can be a key decision for the content of the application. Finally, training programs will most likely expect some form of test or exam to check the performance increase in knowledge and skills of the person taking the training. Devising fair and valid questions for a piece of training is not an easy task. Too often this skill set is underestimated and undervalued. The range and type of questions needs to be aligned to the type of content and type of transfer of knowledge and/or skill. The restrictions of online bandwidth affect the ways of testing the transfer of knowledge and skills more than is realized. Because the growth of corporate universities and online training has increased so much, this skill set will gain in importance over the next few years.

Subject matter experts/personalities

Commercial applications tend to use a public figure because the name helps to sell the product. They may be experts in the field or have strong links to the subject. Sometimes, the experts will take an active part in the program by being in the video or doing some of the voice-over. Sometimes they might just endorse the application. On other occasions, they might help to define the content and check the scripts. There can be a pairing between training analysts, subject experts and instructional designers or combinations of these, as and when the project needs it.

It is important that you and your client are confident about the integrity of the content, so it is useful to tap into subject expertise. However, the more people that are involved in vetting scripts, the more problematic it becomes to stabilize them. The subject experts have to be given a clear brief of their roles and responsibilities in the project. If the experts are from the client company, they can influence the project strongly. They can cause havoc if they begin to stray out of their area of expertise into criticizing the interactive structure or the interface, for example.

Their advisory and critical role has to have strong boundaries drawn around it to allow the rest of the 'experts', the core team, to do their job effectively. You need to explain to the client that the experts' advice has to be put into the complete interactive context, and that when this happens some compromises may have to be made. This is more of a problem when the experts suggest complete new areas that need to be incorporated into the application too late for you to reconcile with time and cost.

Subject matter experts and personalities are quite easy to locate and recruit but their guaranteed allocation of time to the project is more of a problem. Your clients will often recommend their preferred experts. It is important that you explain how time-critical their input will be, and get a signed commitment. This applies for all types of project, on- and offline.

THEORY INTO PRACTICE 11

Allocating roles and responsibilities

The checklist at the end of the chapter covers many of the tasks that need to be performed during the interactive media project cycle.

Apply the list to your present or a past project by inserting the team's initials into the relevant boxes to see how the roles and responsibilities pan out. Put 'not applicable (n/a)' where appropriate. Beware any gaps, and ensure they are covered next time.

The listing can be useful during your pre-interview and interview stage. If you are going to use in-house resources, then you can map out their roles and responsibilities, indicate where 'not applicable' applies, and from the gaps that are left get a feel for the personnel you need to recruit and the tasks they will need to perform. You can then make a note of the skills that lie behind the tasks to get a skill profile for the people you need. This checklist would not be comprehensive for international projects where more tasks are used, but it could serve as a starting point for you to adapt if necessary. The checklist can also be found on our website.

Summary

- The project manager needs to identify the mix of skills necessary for the project and then assemble an appropriate core and extended team.
- Recruitment is not an easy exercise. It should be handled professionally with good preparation, briefing and role definitions.
- Knowledge of what roles exist and the contribution each can make to the project is important to help in decision making.
- Each role has its own range of skills and considerations. Careful assessment of the skill level needed has to be balanced with the project needs, budget constraints and management style.
- Clear assignment of responsibilities is necessary to ensure that all project tasks are covered. It is a good idea to list all the tasks and assign the person responsible for each as a check that all aspects have been covered.

TABLE 10.1 Project task and skill set checklist.

Client liaison	Initial(s)	Recruitment/selection general	Initial(s)
1. Attend meetings		1. Identify resource needs	
2. Write up meetings		2. Cost resources, align to budget	
3. Be the main telephone/fax/e-mail contact		3. Organize deskspace, equipment, etc	
4. Respond to queries		4. Organize appropriate CVs	
5. Organize sign-offs – proposal, contract, content, scripts, database		5. Select interviewees	
6. Handle scheduling		6. Define roles and responsibilities	
7. Monitor budget		7. Write job description/criteria	
8. Handle disputes		8. Define skill mix needed	
9. Inform on project status		9. Interview	
10. Negotiate changes in time and cost		10. Select appointees	
		11. Negotiate contracts	
		12. Negotiate with agencies	
		13. Induct new recruits to company	
		14. Induct new recruits to project	
Audio production	**Initial(s)**	**Stills/graphics production**	**Initial(s)**
1. Direction/production manager		1. Direction/production manager	
2. Scripts (main and Help)		2. Graphics production	
3. Organize studio facility		3. Picture researcher	
4. Organize recording/edit		4. Rights and clearances	
5. Organize translations		5. Electronic asset management	
6. Direct edit		6. Animation production	
7. Select voice-overs		7. Photgrapher	
8. Select/commission music		8. Lighting	
9. Negotiate rights and clearances		9. 3-D modeller	
10. Liaise with programmers/technical quality assurance, formats		10. Computer graphics	
11. Organize M & E tracks		11. Scanner/digitizer	
12. Organize encoding		12. Art director	
13. Encode		13. Illustrator/artist	
14. Monitor and approve costs		14. Text/page layout	
		15. Typography	

TABLE 10.1 (Cont)

Design and documentation	Initial(s)	Computer and integration	Initial(s)
1. Produce final contract agreement 2. Carry out specialist analysis if necessary 3. Produce technical specification 4. Product outline/high-level specification/brief 5. Research and define content blocks 6. Research and define detailed content 7. Produce interactive script – interface functions, Help script 8. Liaise with subject experts		1. Programmer/software engineer 2. Technical manager 3. Network manager/webmaster 4. Maintenance 5. Backup/archiving 6. Software librarian	
Video production	**Initial(s)**		
1. Direction/production manager 2. Identify resources needed 3. Cost resources, align to budget 4. Organize recruitment 5. Select interviewees 6. Define roles and responsibilities 7. Interview 8. Recruit or delegate and recruitment 9. Recruit: scriptwriters, camera, lights, sound, grips, make-up, continuity, catering, communications, logging, etc. 10. Negotiate contracts 11. Negotiate with agents 12. Organize shoot (locations, props, etc.) 13. Clear locations, liaise with police 14. Cast artistes 15. Organize facility houses/edits 16. Recruit video graphics: 3-D animator, computer compositor, etc 17. Direct edits			

TABLE 10.1 (Cont)

18. Edit offline 19. Edit online 20. Approve edits 21. Film/picture research 22. Clearances and rights (footage, pictures, music, voice-overs, etc.) 23. Liaise with programmers/technical quality assurance 24. Monitor and approve costs 25. Organize video encoding 26. Encode video
Database development **Initial(s)**
1. Identification of data blocks 2. Link to information architecture 2. Collation of data 3. Verification of data 4. Liaison with clients 5. Integration into project 6. Indexer 7. Help script 8. Spell check and editing
Administration **Initial(s)**
1. Typing 2. Filing 3. Answering/making phone calls 4. Collating personnel and project documentation 5. Sending and distributing faxes/ messages 6. Organize meetings, book rooms 7. Organize couriers, cars, post, etc. 8. Photocopying 9. Collect timesheets

Recommended reading

Belbin R.M. (1981). *Management Teams: Why They Succeed or Fail*. Oxford: Butterworth-Heinemann

Belbin R.M. (1993). *Team Roles at Work*. Oxford: Butterworth-Heinemann

De Marco T. and Lister T. (1987). *Peopleware: Productive Projects and Teams*. New York: Dorset House Publishing Co.

Honey P. (1988). *Improve Your People Skills*. London: Institute of Personnel Management

Katzenbach J.R. and Smith D.K. (1993). *The Wisdom of Teams: Creating the High-Performance Organization*. Boston, MA: Harvard Business School Press

Phillips N. (1992). *Managing International Teams*. London: Pitman Publishing

Raudsepp E. (1963). *Managing Creative Scientists and Engineers*. New York: Macmillan

Tjosvold D. (1992). *Team Organization: An Enduring Competitive Advantage*. Chichester: Wiley.