



# EMCC case studies

## Gopher Publishers

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This case study is available in electronic format only

## Company facts

Gopher Publishers is today fully owned by the Quote Media Group, which took over the company in December 2001. Quote Media is a medium-sized, independent multimedia company based in Amsterdam, the Netherlands. It has approximately 200 employees.

The company has two main activities: publishing magazines and guides and e-commerce. The company publishes seven Dutch magazines for the high-end affluent demographic segment. Quote Media decided to invest in Gopher in order to strengthen its e-commerce arm, and because it needed the Internet publishing platform as an engine to repack and distribute the content it already had. Gopher Publishers had a turnover of €1.1m in 2001, and made a profit that year. It is expected that the turnover will increase in 2002.

In 1997 Hans Offringa and two partners established Gopher Publishers. Today it has nine employees and Hans Offringa, who sold the company to Quote Media, is still involved with the company on a contractual basis.

The publishing concept behind Gopher Publishers is based on a software application called Kitabu ('Kitabu' is Swahili for 'book'), which was developed in-house. This application makes it possible to produce publications on demand and, when appropriate, to accompany the publication with a personal message, dedication and commentary. Furthermore, Kitabu allows users to update and change any digitally stored information whenever they want to do so. Kitabu offers Gopher's customers (authors, printing companies and publishers) the possibility to publish directly from a database, giving the purchasers the opportunity to select and custom-design a publication from the available stock. Finally, Gopher also offers business clients the opportunity to manage the distribution of publications.

## Market dynamics and company changes

Gopher Publishers addresses the market for low-volume, personalised and on-demand publications in the consumer as well as the business segments.

According to the managers at Gopher, the publishing market has been characterised by constant improvement in work processes across all parts of the value chain. From content and database development, over book production and binding to marketing and logistics, the quality of the outputs and the effectiveness of the methods and tools have improved dramatically over the last few years. This development goes hand in hand with continuous digitalisation of the processes involved in publishing. Gopher needs to be right at the heart of this improvement process, concentrating on the segments that the larger publishers are finding too small to be worth penetrating.

Gopher Publishers recently demonstrated its publishing concept during the National Book Week 2002, organised by the Association for the Promotion of Dutch Books (CPNB). Gopher Publishers set up a facility in conjunction with the organisers, whereby customers visiting a specially designed website could order a book that contained 10 of their favourite poems by selecting from a range of 500 poems written by 80 of the Netherlands' most famous poets. Apart from the poems, the book would automatically include a bibliography on the poets and a personalised dedication to the recipient of the book if the book was intended as a gift. The event lasted one week and during that week Gopher received 8,000 orders for personalised poem books. More than 70% of these books were gifts and automatically sent out to the named recipient.

Each publishing company providing content for the book received an individualised report containing the following details: most frequently selected poems, regional preferences and typical combinations of poem selections.

The owner of Gopher Publishers refers to the Gopher publishing concept as a system with which ‘every person who has content can be a publisher’.

Gopher’s platform Kitabu is also used by three public broadcasting companies in combination with television programmes and websites:

1. Teleac (the Dutch Television Academy) broadcasts educational programmes free of charge. The viewers can order a textbook that comes with the programme, but Teleac never knows in advance how many textbooks will be ordered and have to be printed. Gopher sets up a new textbook in Kitabu, links to it through the Teleac website, and after each programme people are invited to order the book via the web. Subsequently, Gopher produces single copies of the orders, sends them directly to the customers, takes care of payments and pays Teleac a royalty fee for each book that is actually produced and sold. This project requires no investment by the broadcasting company and leaves them with no surplus stock of books.
2. VPRO wants to offer its viewers and listeners a selection of interviews with famous pop stars. The interviews are transcribed and made suitable for printing in book form. Viewers/listeners can choose their favourite artists and these interviews will be put in a customised and personalised version for each customer. It applies to both radio interviews as well as television programmes. A link is set up between the Kitabu system and the VPRO website, by which VPRO can maintain its own look and feel, while the software and content are stored on Gopher’s Kitabu system.
3. TROS has popular cooking programmes running on television where a chef prepares meals from recipes which are sent in by the viewers of the programme. TROS has asked Gopher to set up a system where people can make selections from the database for a dedicated cooking book, for example only fish or vegetarian recipes, etc. The set-up of the system is similar to those described above.

These examples show that Gopher is continuously adapting its system to the opportunities that emerge throughout the media market. In fact, Gopher tries to take full advantage of media convergence by combining the strengths of different media: television, books, newspapers, radio, computers and telecommunications networks.

The primary role of the management team and board of the company is to make the right strategic decisions. The management team carefully analyses the different segments of the publishing value chain in order to identify where Gopher would be able to take full advantage of its Kitabu system and business model.

Another role of management is to convince publishers and printing companies that they have to change and that the old publishing model no longer works. Gopher Publishers faces the criticism of being ‘just another Internet business’, whereas the management team emphasises that it is not an Internet business but a publishing company. It only uses the Internet to streamline processes along the rapidly changing value chain in publishing, making it possible to be profitable on small volumes of publications and combining the strengths of different media.

Five years ago, when Gopher was set up, it was a difficult task to convince publishers and printing companies of the Gopher publishing concept, because the quality of digitally printed books was not as good then as it is

today. Today, many printing companies and publishers find the business model of Gopher extremely interesting, because it provides new streams of potential revenue within their business, often based on existing content and knowledge.

Publishing companies wishing to thrive in the future market will have to focus on adding knowledge to their information databases and content. Simply producing books and manuals will not be enough to stay in the publishing market; publishers will have to apply their knowledge of how books and manuals are to be used in the production process.

For this business model to be a success, all employees at Gopher have to be interested in the entire publishing process. They cannot operate only on their part of the process, but have to work as a team. The nine employees at Gopher constantly learn from each other by communicating and exchanging information.

Editors, for example, prepare a book in collaboration with the database operator and the web designer in order to improve the user interface for the book on the screen while structuring the content of the book in the database. Gopher's small team of editors and software engineers publish between four and eight books per week.

While exchanging information and knowledge internally has been common practice since the start of the company, Gopher was at first reluctant to exchange knowledge with external partners. The company owners were worried that other publishers would copy the idea and set up a similar system. Today, they realise that the exchange of knowledge and information is what creates new opportunities. Gopher learns about the processes, content and cost structures of other publishers and printing companies and, in return, the publishers and printing companies learn about new business models and opportunities.

Everybody at Gopher is involved in this process of exchanging knowledge and information with customers and partners. It is a delicate task that covers every single detail of the value chain in the publishing industry.

During this process, the company has changed from being a publishing company into a business which sells a publishing platform and its system. Gopher strengthened its strategic position by signing a cooperation agreement with Xerox Corporation. This agreement with a dominant supplier of digital printing equipment gives Gopher an important third party endorsement of its technology and method as well as direct marketing access to Xerox's customers in publishing and printing.

The management at Gopher realised they needed capital and credibility in order to promote the company further. For this reason, the owners started to look for an investor who could use the Kitabu system for its own purposes and gain strategic opportunities in the marketplace to sell the system to other publishers and printers.

When the company was taken over by Quote Media Group, there was an urgent need to cut costs. At the time, Gopher still focussed very much on publishing while keeping control of all aspects of the publishing process. In other words, all production phases of publishing a book were handled internally.

Gopher Publishers originally had five people employed in a design studio but after the move from producing books to selling a system it did not make sense to run the design studio internally. There were not enough design jobs to keep them all occupied. Therefore, the design studio was closed and future design tasks outsourced to external partners. The company was fortunate to secure new jobs for four of the five employees in the design studio, but one person had to be made redundant.

In addition, Gopher Publishers had a financial department dealing with accounts and finance and employing two people. The new owners, Quote Media, already had a financial department and therefore did not need such a department at Gopher. Again the company managed to identify a new position for one employee, but had to make another person redundant.

With these two cost-cutting measures behind them, Gopher Publishers could focus on developing its new strategy as a provider of a publishing system while still offering its publishing service to authors.

### **Future changes**

The main challenge for the company in the future is to continue identifying those markets and publishers which have content of value to both business and consumer segments that could be offered in small volumes, on demand or personalised. In doing so, the company may be able to preserve minor languages or fields of interest while generating revenue on content that is owned by other companies.

The main threat comes from existing publishing companies, which may change their current strategy of focusing on high-volume production to low-volume production, or to turn away from general to personalised publications. These companies may do this by developing their own publishing systems.

Gopher Publishers intends to develop a European base of printing companies and publishers which will use the Kitabu system for low-volume, personalised or on-demand productions, as well as collaborating on cross-country productions of customised publications and distribution. So far, the company has agreements with firms in the Netherlands, Belgium, Germany and the UK. In addition, there are discussions under way with a possible joint venture partner in Spain.

All employees are part of the above process and, in this way, they demonstrate that Gopher's business model can work and generate profit. All employees play an essential role in the daily communication with both new and existing customers, explaining every detail in the Kitabu system. Strategic plans are therefore regularly discussed in staff meetings at Gopher.

However, the job functions are not likely to change much at Gopher. Each person already has a wide range of responsibilities. Editors are not simply editors: they comment on user interfaces and database construction; they organise marketing and book promotions as well as handling traditional editorial tasks.

Software engineers not only programme the software of the Kitabu system, they continuously update their knowledge of how the publishing industry functions. Moreover, they have an understanding of the accounting systems and processes of other publishing companies and use this knowledge to develop new features in the Kitabu system.

The company is constantly identifying new opportunities. In December 2002, Gopher launched a new music sheet business on the web, taking full advantage of the cross-border transferability of music.

## Organisation and the market

Gopher Publishers is situated at one site in Groningen. The company does have a small sales office in Amsterdam in collaboration with Quote Media, but it is not staffed continuously. The company is organised in two main departments: one department deals with book publishing while the other develops and operates the Kitabu system.

### The publishing department

This department consists of three editors who provide support to the authors by reading their manuscripts, then set up the book production, edit the content, and plan and carry out the promotion and marketing of the book.

### The publishing system

Only one person works in this department. This person is in charge of production and logistics; whenever necessary, the Kitabu system can be operated manually, i.e. transferring production of a book from one printing facility to another.

There are two people in the software section: the chief designer of the Kitabu system and an assistant. Apart from being responsible for further development of the Kitabu system, these two persons give support to three other printing companies, which use Kitabu to service their customers. There is also a database operator who organises the content of the different books, as well as a web designer who maintains the company's website and ensures the launch of new books on the web.

A general manager runs Gopher Publishers: besides the day-to-day management he is also responsible for sales to new customers.

As an associate, Hans Offringa, one of the previous owners, is still involved in the business. He is mainly responsible for business development.

It is likely that the company will need one or two additional software engineers in order to provide support to new customers during the implementation and operation of the Kitabu publishing system. Otherwise the expansion into new markets will not require more staff. On the publishing side, the company may need another editor should the increase in demand develop as expected.

At Gopher, responsibility for tasks is delegated and deadlines are allocated, but thereafter it is usually up to the individual how and when he or she delivers the work, which means work is organised on the basis of trust and the ability and willingness to contribute.

The main issues concerning the adoption of information and communications technologies are not internal. These have to do with concerns from customers about the fact that the Kitabu system is a so-called 'Application Service Provider'. Customers are sometimes worried about the reliability of the system and have difficulty accepting the fact that the content is stored somewhere else. They may also have doubts about the quality of the output that the system can produce.

Many customers, however, have invested heavily in different Internet adventures that did not work for their business. They are interested in Gopher's total publishing solution, because it offers new opportunities for

developing their business and because all they require is an Internet connection and an Ethernet. The rest is dealt with by the Kitabu system.

### **Workforce and the market**

From the very beginning Gopher Publishers had a high level of information and communication technologies (ICT) usage throughout its work processes. A high level of ICT penetration and effective use of the Internet have enabled the company to sustain its growth without increasing the number of staff.

With two people in their mid-20s, two in their early 30s, two in their late 30s and two in their early 40s, Gopher has a young team of staff. The female employees in the company work as editors and the male employees work as computer and software engineers. They therefore have a saying at Gopher: 'The men build it and the ladies use it.'

### **Salary**

The salary system at Gopher is based on a fixed annual salary for each employee. The company does not operate a bonus system. The previous owners had planned to put in place a share option scheme for all employees. However, since the company has been taken over by Quote Media Group, this scheme is no longer discussed. The company has no immediate plans to change the salary scheme.

All employees at Gopher Publishers have employment contracts and these state that training requirements will be met as long as they benefit the development of both the company and the individual employee. Employees have to put forward their requests for education and training, which will be discussed with the manager in relation to his/her job function and the plans of the company.

Employees are rewarded according to their contribution and output. Gopher Publishers measure output on an annual basis. At the beginning of each year, the company establishes targets for the number of:

- books to be published (based on what the editorial staff can handle in one week);
- clients to be signed up (based on what the company knows it requires to set up a client with the Kitabu system).

Furthermore, Gopher Publishers projects a specific amount of extra software to be developed on behalf of business clients. If this criterion is fully met, 150% of the costs for a software developer for one year are covered. Each employee e-mails an overview of work done/work in progress/amount of time free for the week to the general manager. These schedules are discussed in the team meeting on Monday morning and, if necessary, priorities might have to be reviewed.

### **Labour relations**

Employees at Gopher Publishers are not unionised. There is no rule against unions, but the employees have not felt the need to join a union. They do, however, take an active part in the managerial decision-making process. The company holds weekly staff meetings on Mondays where all issues are discussed. These issues may concern human resources matters, tensions between colleagues, an overview of sales figures compared with targets, a review of prospects and projects, an overview of publicity gained and opportunities for further publicity. Strategic issues are normally discussed either with the editors when they concern the publishing business or with the computer engineers when they concern the sales strategy for the Kitabu system.

The company is made up of 50% non-smokers and 50% smokers. The company tried to introduce a non-smoking policy, but that did not work. People were disrupted in their work because they had to go outdoors in order to smoke. The office in Groningen has two levels, with all the smokers currently at the top level, and the non-smokers at the bottom level, a solution that seems to work quite well.

The publishing industry is going through major changes that will affect many job functions. People working in lithography departments, the layout staff and photographers will see their jobs increasingly taken over by automated processes and the emergence of different job functions. Considering this scenario, interviewees at Gopher see a huge need for re-educating people in the publishing industry whose jobs are at danger.

## **Education and training**

At Gopher Publishers, there is no formal education and training programme. Every employee is responsible for his or her own learning. When an employee has a need for training, he or she will raise this issue with the manager, and they will agree on how this training requirement will be met.

Over the years, there have been regular requirements for updating the technical skills of different employee groups, in particular regarding the running of an ASP solution and mastering different software development tools.

The editors have taken external courses in the marketing of books, creative writing, editorial skills, etc.

There is no formal induction programme at Gopher. A new employee normally starts on a Monday morning and is introduced to staff during the weekly meeting. During the following days, the new person will make appointments to have in-depth discussions with each of the new colleagues to get a better idea of what they do and how this fits in with the whole process. The aim is to prepare the new employee to think in terms of the whole process while doing his/her new job. Then the new employee is ready to find his or her own way in the company and the work processes. It is extremely important at Gopher that each employee understands the whole process and can explain it to external contacts.

The move from being a publisher to selling a publishing system has also created the need to train the customer. This educational process is a continuous one and is not just about running courses for printing companies who have bought the Kitabu system. Potential customers need to be taught about the publishing possibilities available in the Kitabu system. Everybody at Gopher is involved in this process.

## **Virtualisation of the workplace**

Today the Kitabu system has been completely documented. When Gopher Publishers signed the agreement with Xerox Corporation, the complete documentation of the system was one of the requirements put forward by Xerox. In addition, the original software code was stored at the national Escrow Institute. Because the software is now fully documented, the company is less dependent on the chief designer who programmed the system. Should this person leave the company or somehow not be able to work any longer, Gopher would still be able to maintain the existing system. They would, however, not be able to further develop the system. Therefore, the chief designer is still an important asset for the company.



At Gopher, all employees are advanced users of ICT. In addition, some are advanced developers of software applications. They all choose their own laptop computers, as well as the applications and software they need for their job functions. As far as work processes are concerned, Gopher cannot fulfil an order unless it is received over the Internet. Should an order arrive by fax or telephone, then all the details are keyed into the system through an Internet browser interface.

Employees who for some reason are unable to come in to the office for a day or two can work from home if the type of work they are doing at the time allows them to do so. All employees are able to access the systems of the company from their homes. This facility is used quite frequently by employees, giving them the flexibility to take care of sick children or deal with household issues while still getting some work done. In this situation, colleagues are able to stay in touch using e-mail and mobile phones. Typically, the services that Gopher provides do not allow employees to work long spells from home, because they lose touch. However, this is not something the company regulates. It is discussed and organised by the employees themselves.

Communication with customers takes place through different media. The Kitabu system allows certain customers, primarily printing companies and publishers, to access Gopher's back-office systems where they can connect with usage data, sales figures for their particular products, etc. Similarly, authors who sell books through Gopher's system can look at orders and buyer details, see if buyers want to make contact with the authors, and they may change information about their books on the website.

Usually the first contact with an author is via an e-mail that the author sends to Gopher Publishers. The author will attach a manuscript to the e-mail and ask for an opinion from the editors at Gopher. Only then will the author and Gopher's editor meet to discuss details and terms, if at all. At most other publishers the typical procedure is the other way round. First the author and editor will meet, and the author will bring along a hardcopy of the manuscript. Subject to agreement, the author may send the editor his or her manuscript by mail.

Business customers are usually contacted first by telephone, followed by meetings where the project is discussed in depth. Contracts with businesses are usually quite complex in terms of who needs to be involved, what business model should be used and how this relates to the existing business of the company, how the content should be presented, promoted and what changes it will require internally.

In selling the Kitabu system to printing or publishing companies, Gopher frequently meets organisational reluctance from customers, because the system and business model often result in huge changes internally. The technical contact person may find the idea very good, whereas the marketing contact person is against it. The marketing person may be concerned that in using the Kitabu system consumers would be allowed to personalise products, where the company has so far been successful at selling several items to the same consumers by packaging less interesting content with popular content.

Gopher has faced other constraints within organisations. By implementing the Kitabu system, it is likely that processes that up to now have been handled manually by employees will be automated. In such situations, introducing the Kitabu system implies a reorganisation of workflows in the publications department and/or sometimes even laying off staff. Some customers choose not to use the Kitabu system in order to avoid these organisational changes.

Nevertheless, Gopher Publishers believes that the business model and system they offer will help many publishers and printing companies to improve their services in the future. As an example, they recently helped

a company launch its technical manual giving the employees the choice of mobile PDA access, individual prints of specific sections or the complete manual in book form. 'Choice' is a keyword for Gopher. In future, the consumer will want to choose both form and medium depending on individual needs.

Another example is a Dutch encyclopaedia which publishes the encyclopaedia both as a CD-ROM and online over the Internet. The company had recently received requests from customers for the product in book form again and did not know how to respond to this. The number of consumers requesting the printed version was too small to warrant a print using traditional methods, and they all wanted different combinations of the content anyway. The company went to Gopher to discuss a model whereby Gopher could allow customers to package encyclopaedias as they wish using the already digitalised content and have it printed in a full colour, good quality book version.

**Gopher Publishers**

Groningen, The Netherlands  
www.gopherpublishers.com  
www.quotemedia.nl

*Thanks to Hans Offringa (founder) and Gijs Schooten (President of the Board) of Gopher publishing who provided information and material for these studies.*

## Annex: Interview questionnaire

### 1. Semi-structured interview with management

#### Company facts

- Short description of the company
- Number of employees (total/the specific department you are interviewing)
- Location
- Products/markets
- Legal/ownership structure
- Organisational structure
- Company turn-over

#### Market dynamics and company changes

- What is the company's competitive position within the graphics and media sector, both nationally and internationally?
- What are its current weaknesses and strengths and why?
- What was the position of the company five years ago in terms of key products and services, number of employees, organisational structure?
- What are the most important changes that have occurred in relation to these themes? Has management taken an active role in bringing about these changes, and to what degree have the employees been involved/informed? Or are the changes perceived rather as something 'induced from the outside', where the company has just been forced to follow pace?
- What role has ICT and globalisation played with regard to these changes? How has the organisation prepared for this, and who has taken the main decisions? What type of measures have been taken? (innovation strategies: organisational changes including production flow, new partnering structures, new business models, etc, cost-cutting measures: outsourcing, reduction of staff, optimisation of production processes. Please provide concrete examples of initiatives that have been taken and describe the effects at both strategic and operational levels.
- What do you perceive will be the main opportunities and threats over the next 5 years? How are you at this stage planning for these? Are employees involved in this kind of forward-planning, and if yes, how?
- Where do you think the company/area for which you have managerial responsibility will be in five years with regard to products/services, share of the market, employees, organisational structures, partners/collaborators and why?
- What do you think will be the biggest changes, and how are you preparing to deal with these?

#### Organisation and market

- How are the key functions organised within the company. Do you rely on suppliers/sub-contractors? If yes, for which functions? Have there been changes in organisation and workflow during the past five years? If so, why? Have there been any planned changes? If so, why? What role does ICT play in this?

- Are the main activities within the organisation spread over different locations/addresses? Have there been changes in this respect over the past five years? Have there been any planned changes? If so, what role does ICT play and how does it affect skills and communication structures within the company?
- Do you perceive the company to be technologically advanced? If so, please give examples. What are the main issues concerning the adoption of ICT? (innovation strategies: new products, efficiency in workflow due to pressure from competitors, implementing a new business model, cost-cutting measures: reduction of staff, outsourcing, optimisation of production flow, etc). Please give examples.
- Does ICT give you a competitive advantage? If so, please give examples.

### **Workforce and the market**

- Has ICT resulted in layoffs or an increase in the number of staff? (quantify over the past five years and give expectations for the future).
- Has ICT led to a demand for other skill profiles and job functions? How have you accommodated this demand? eg, internal training, reorganisation of workflow, hiring of new staff, etc. Please give examples.
- How do you prepare management and staff with regard to ICT skilling? Please give examples.
- Have there been any special measures or issues with regard to elderly workers, women and ICT?
- What type of work contracts do employees have (eg full-time, part-time, freelance, temporary)? What changes have there been in this respect over the past five years and why?
- Are salary structures linked to job roles or are there variations on an actual skills basis?
- How do you recruit staff? Have there been changes in your recruitment strategy regarding the competence profiles you are seeking (both with regard to technical and personal skills)? Please give examples.

### *Salary*

- How is the salary system constructed? Are there differences for different groupings? Do you have a bonus system?
- Do contracts include the right to education and training?

### *Labour relations*

- Are employees unionised? Are employees involved in any type of managerial decisions through formalised or informal structures? Please give examples.
- Which topics have been/are on the agenda?
- Do you have an equal rights policy?
- Do you have a union policy? If so, what role has this played?
- What role do you see for unions/employer relations with regard to a proactive stance on industrial change, if any? (local, sectoral, national, and/or EU levels, including the European Monitoring Centre on Change)

### **Education and training**

- Do you have any formal educational programmes for different employee groupings? Has ICT affected the content of these programmes or their delivery?
- Is there an induction programme for new employees? If yes, what kind and how does it work?
- If there have been technical or organisational changes recently, have they led to particular training initiatives? (Content and duration? Who was the target group? What were the effects? Who took the initiative? Were employee or employee representatives involved?). If there were no particular initiatives, how did you deal with the changes?
- Are training courses held in-house or externally?
- What other means are used to ensure the necessary ICT skills base?

### **Virtualisation of the workplace**

- How integrated is ICT in the internal workflow and processes and in the products and services and communication with customers and clients?
- What developments do you think will most likely occur internally and with regard to external relations and with regard to products over the next year?
- How do you think this will affect the overall organisation, employees and the business model?
- Is ICT regarded as a strategic issue affecting the core of your business or is it mainly regarded as an asset to improve efficiency and cut costs? Or a mixture of both? Please describe.
- How engaged are the employees in the process of defining the role of ICT in their work situation?

## **2. Semi-structured interview with employees**

### **Market dynamics and company changes**

- What is your perception of change (opportunities and threats) with regard to ICT and globalisation? What is your involvement in the change process?
- What is your reaction to change (innovation strategies/cost cutting measures)? How have employees been prepared for these changes?
- What are the main opportunities and threats for the company over the next 5 years with regard to ICT developments? What is the expected effect on employment, skills and work?

### **Organisation and market**

- What is your knowledge and perception of planned changes in the immediate future regarding ICT and conversion and the expected outcomes?
- What is the level of ICT penetration in the company and how does it affect job profiles, skills basis, and work organisation?

### **Workforce and the market**

- What are the effects of ICT on employment and skills basis and job profiles?
- ICT and demand for other skills profiles and job functions (internal reorganisation and training, new hires?), how are employees prepared to deal with media conversion and an increased use of ICT with regard to skilling?
- Have any special measures taken or issues to deal with regard to specific target groups?

### *Salary*

- Does the company have salary incentives and a performance review?
- What formal acknowledgement is there concerning education and training?

### *Labour relations*

- What is the role and involvement of unions with regard to media conversion and ICT?
- What topics have been/are on the agenda?
- What is the role of unions/employer relations with regard to a proactive stance on industrial change (at local, sectoral, national, and/or EU level, including the European Monitoring Centre on Change)?

### **Education and training**

- Describe any training measures with regard to ICT: type, level and target groups.
- Describe other skilling measures introduced with regard to ICT.
- Have recent technical or organisational changes led to particular training initiatives?

### **Virtualisation of the workplace**

- What changes have occurred in the level of ICT penetration and how has this affected jobs, skills and the work environment?
- What are the expected ICT developments in the future and anticipated effects?
- What is the level of employee involvement with regard to ICT implementation and change occurring from ICT?