

Business-to-Employee Cooperation Support through Online Job Interviews

Georgios A. Dafoulas
Computation Department
UMIST
dafoulas@co.umist.ac.uk

Adamantia G. Pateli
Computation Department
UMIST

Mike Turega
Computation Department
UMIST
mt@co.umist.ac.uk

Abstract

*The Internet has emerged as a viable and reliable tool for recruiting. Using the Internet and e-Business applications, companies and applicants can reach one another faster and easier. This convenience has resulted in significant challenges for Human Resource departments. First-generation automation tools made the initial step toward addressing these challenges. Early systems provided the ability to collect resumes online. However, they failed to solve hiring process problems and provide meaningful workflow. Within this scope, this paper proposes **online interviews** as a tool that allows recruiters to gather structured interview information and assess cultural fit, while at the same time streamlining the interview process and reducing interview biases. Online interviews cannot replace the traditional face-to-face interviews, but can definitely provide the means to help recruiters and hiring managers with interviewing challenges.*

1. Introduction

In the emerging digital economy, the Web and e-Commerce have evolved to key business drivers. Few companies or industries are immune to the effects of the digital revolution. The great majority of managers are struggling to comprehend this new phenomenon, so that they can evaluate the opportunities for innovation that it offers to their sector and more specifically to their business. Just as many have started to grasp e-Commerce, the next wave – e-Business – has already reached. Intensified competition and new e-Commerce opportunities are pressing traditional companies to build e-business models that are flexible and fast moving. Under this strain, the core of the enterprise itself is going through a metamorphosis. The next stage of this structural evolution is e-corporation built on an interconnected Web of enterprise applications, which transfer online the enterprise's primary business processes [7].

At the same time, great changes and evolutions are observed in the landscape of Business Organisation and Management. Many organisations have reflected this inescapable change by renaming their formerly known as "Personnel Departments" to "Human Resource Management Departments" [14]. Managers have raised

their appreciation on the so-called "human capital" and its impact on the company's growth, and thus have established a number of advanced structures and mechanisms for selecting and managing it.

Today, a great challenge is posed for both Human Resource managers and e-Business solutions providers: to cooperate in order to build Web-based applications for conducting online the recruitment and selection processes. Organisations that are willing to apply Web-based solutions for their HR processes have usually a dual purpose: a) move the enterprise towards the e-corporation vision, b) facilitate HR managers in conducting their recruitment tasks and, therefore, accelerate the entire hiring process.

Given the increased importance that is lately given on the Human Resource departments, the driving forces for business change, and the ambitions of practicing HR managers, it is no surprise that those attempting to practice in the field face a veritable barrage of conflicting pressures and role requirements [14]. Under this strain, they are expected to be efficient but also rapid and cost-effective in taking decisions.

The most common, and maybe the most important, type of decisions that HR managers daily make is about the selection and assessment of pre-employees. Thus, managers would certainly welcome the introduction of a less time-consuming but adequately efficient process of conducting their interviews and assessment tests on candidate employees. Identifying this challenge for opening a new e-Business application area, this paper indicates the perspectives raised for Human Resource Managers from the transition of the selection process, and mainly of the screening activity, to the World Wide Web. These perspectives can be better perceived under the development and evaluation of methodologies, techniques and tools that enable HR managers to create online interview tests (also termed as questionnaires) for screening their candidates.

2. Recruitment and selection

Recruitment is a form of business competition [3]. Just as corporations compete to develop, manufacture, and market the best product or service, so they must also compete to identify, attract, and hire the most qualified people. As Senator Bill Bradley has noted [2], "in the

global competition of the twenty-first century, the ability to forge international alliances and to relate to people different from ourselves will be critical asset. Recruitment and selection of people with those abilities will be more important than ever”.

Recruitment begins by specifying human resource requirements (numbers, skills mix, levels, time frame), which are the typical result of job analysis and human resource planning activities. The step following recruitment is initial screening, which is basically a rapid, rough “selection” process. The selection process that follows initial screening is more rigorous. Apart from physical characteristics, samples of behaviour are also needed for guiding the final selection.

The screening phase, also called as pre-screening [1], short-listing [12], or pre-selection [11], has two common aims: a) to reduce the numbers of applicants to manageable levels for more detailed methods of assessment to be applied, and b) to reject unsuitable applicants while retaining the most suitable ones.

Therefore, screening constitutes the initial step to selection and aims at reducing the number of applicants that will participate. In the present labour market, the task cannot simply be that of screening out those without certain necessary qualifications. There are usually far too many applicants for such a strategy. Pre-selectors therefore have to choose from among many perfectly well qualified applicants those who will be passed on to the next stage of the selection process. Since there is always a risk of rejecting qualified people, the screening process has become of major importance and a lot of research has been made on selection criteria and techniques used in this phase [11].

Selection is increasingly important as more attention is paid to the costs of poor selection, and as reduced job mobility means that selection errors are likely to stay with the organisation for longer. While the search for the perfect method of selection continues, in its absence, personnel managers use a variety of selection methods for predicting which applicant is most successfully meeting the job requirements. Various selection methods are then considered, such as application forms, testing, interviews, assessment centres, references and use of consultants. It is unusual for one selection method to be used alone. A combination of two or more methods is generally used, and the choice of these is dependent upon a number of factors, such as cost, accuracy, time factors and administrative ease [13].

3. Selection interviews: importance and criticism

Interviewing has been the most common method of selection. An interview is a controlled conversation with a

purpose. In an interview, there is a higher number of exchanges in a shorter period of time related to a specific purpose than in an ordinary conversation [13].

The one constructive and consistent message that emerges from the large body of research into selection interviewing is the finding that structured interviews have considerably higher predictive validity and reliability than their unstructured equivalents [1]. The term ‘structured’ in the context of selection interviewing has a number of distinguishing features:

- ✓ Questions are planned carefully before the interview.
- ✓ All candidates are asked the same questions.
- ✓ Answers are scored according to agreed rating systems.
- ✓ Questions focus on the attributes and behaviours needed to succeed in the job.

While structuring interviews may be a highly effective method of assessment, it is not quite conducive to the creation of a relaxed atmosphere in which the candidate can easily open up. There are two solutions that help ameliorate this problem: semi-structured interviews and multiple approaches [12]. Using semi-structured interviews, the interviewer can opt for a ‘focused’ approach [1], in which there is a degree of structuring but also a greater degree of flexibility than a fully structured approach would allow. Moreover, the interviewer may decide to use different questioning techniques at different stages on the interview.

In this research, the structured format of online interviews is usually implied. The reason is that structuring interviews is a prerequisite for moving interviews on the Internet. All the features of the structured interviews are kept in the online environment. However, HR managers may be provided with an advanced facility; to personalise the questions made to applicants according to their progressive score. This facility does not contradict the second feature of structured interviews, since the final questions made are always selected from the same initial set of questions.

The interview has been extensively criticised as being unreliable, invalid and subjective [13]. Much of the criticism has been of it as a means for managerial selection of candidates rather than as a ritual in the employment process. It is difficult to justify the interview as an accurate way of predicting job performance, and there is disturbing evidence of the inability of different interviewers to agree in the evaluation of the same candidates.

The traditional face-to-face interview has originally been considered a poor basis for employment decisions because interviewers’ decisions are influenced by such factors as first impressions, personal feelings about the

kinds of characteristics that lead to success on the job, and contrast effects, among other non-subjective factors [3]. Contrast effects describe a tendency among interviewers to evaluate a current candidate's interview performance relative to those that immediately preceded it.

Despite the presence of research and the accompanying bad publicity for traditional selection methods, there is plenty of evidence to show that they remain very widely used in the appointment of new employees. The most recent surveys confirm the picture, with IRS finding 100 per cent coverage for selection interviews [6]. A number of alternative explanations can be put forward to explain the survival of traditional interviewing. The most straightforward and significant explanation is that interviews are not only arranged for the purpose of enabling managers to predict the future performance on the job. In fact, the traditional interview has a number of distinct objectives [12]:

- ✓ to predict future job performance and behaviour,
- ✓ to focus on aspects of behaviour and performance that cannot easily be addressed by other methods,
- ✓ to supply information to the candidate,
- ✓ to persuade suitable candidates to accept the job offered and join the organisation,
- ✓ to create good will for the organisation.

For these reasons, whatever the potential dangers for relying too heavily on traditional interviews, there is no practical substitute for some form of informal face-to-face meeting between employer and candidate.

Perhaps the most popular method of imposing some objectivity upon interviewer decision-making is to use a standardised candidate assessment typology. Two such typologies are in widespread use in industry today: Rodger's seven-fold framework [9], and Munro Fraser's five-point plan [4].

The above two typologies offer 'ready-made' criteria against which to assess candidates. The categories are necessarily broad to permit interviewers to rate on these typologies for a range of job functions. Nevertheless, these typologies have been criticised because the dimensions comprising them all carry equal weights in outcome decisions. What is needed, therefore, is a method of weighting the relative importance of each dimension for different job functions. Two ways of doing this exist: Statistical Weighting Algorithms, and Visual-Perceptual Algorithms [1].

4. Business-to-Employee (B2E): a new e-Business type

In the next era of the Internet revolution, companies are anticipated to focus on using technology to connect in new ways - not just with their customers and suppliers, but with their employees as well. This is what the Business-to-Employee (B2E) model is all about. While B2E once meant simply using the Internet to connect businesses to their employees, the expression now encompasses much more: business to employee, business to enterprise, even business to everything. B2E can provide the platform for moving a single business function or process, (e.g. the selection process), or all of an organisation's work, onto the Internet. Because B2E is such a new concept, most companies are in the early stages of developing a B2E strategy. Initially, many companies are focusing on reducing general and administrative costs by moving one or more internal processes onto the Web.

In today's competitive environment, organisations, and particularly their HR departments are called to apply state-of-the-art technological solutions in order to respond to increased business pressures. Such solutions are provided by the Business Process Reengineering methodology and the e-Business evolution. In fact what this project provides is a solution for those organisations that wish to streamline the entire recruitment and selection procedure through e-business applications. Business-to-Employee is the general umbrella of e-Business transactions under which online human resource processes, and thus the screening process, can be classified. Therefore, the emergence of this new e-Business type poses the challenge for HR managers to grasp the opportunity for shifting their activities on the Internet. In this research, the new B2E model is used to include the movement from the traditional to online interview.

5. e-Recruitment: web-based recruitment and selection

While the future of recruitment is undoubtedly computer-based, it is a bad move for a firm to think it can shortcut the recruitment process by using its Web site to advertise vacancies. They still need to be processed and sorted, and this is a time-consuming task that requires experience. As the efficiency of a company can be judged by its competence at dealing with job applications, it makes sense to have the recruitment back office system and processes as efficient as the Web front end. There are several ways to address this challenge. One is to improve the internal HR and have more staff handling and processing applications. Another is to create bespoke electronic questionnaires for potential applicants so that enquiries and applications can be sorted electronically. Using the Web to find staff is not simply an alternative to

placing a newspaper advertisement. Online sifting software makes the task easier, faster and more cost-effective, as well as appearing more professional to the applicants. A third is by outsourcing the firm's Web-based recruitment to a specialist agency that takes over part or all of the sorting, short-listing and interviewing processes [5].

As soon as an integrated e-Recruitment strategy is defined, companies will have to select and invest in automated systems that can help them recruit and select their employees. There are several systems, offered by leading human resource solution providers (<http://www.lawson.com>, <http://www.wonderlic.com>, <http://www.araptech.com>) that promise to help companies not only attract candidates but also screen them through job-related questionnaires. Using the respective service of these systems, candidates can apply for job positions via: Telephone, or/and Remote (Laptop or Online Kiosk), or/and Web Site.

The term "Web-based recruitment and selection system" is used in this research to refer to a fully-integrated e-business solution to make Human Resource professionals stronger leaders in the organisation, while providing employees a higher level of service. Such a system supports transforming time-consuming, routine activities, such as recruiting, resume management, and screening, into automated, online processes, thus making it easy and simple for Human Resource specialists to manage an integrated end-to-end business process.

The following, main steps of an end-to-end e-recruitment process, provided by a Web-based recruitment and selection system, are represented in figure 1.

- 1) A manager creates an electronic job ad, and posts it online for access by job seekers.
- 2) Candidates apply for the job and are automatically screened for appropriate knowledge, abilities and skills.
- 3) The system conducts an online interview, posing questions tailored to the position, and personalised to candidates. Candidates attach their resume to their interview questionnaire.
- 4) Candidates receive feedback on their interview.
- 5) When a qualified candidate applies, the system notifies the recruiters, usually through email. The notification includes a complete profile with the candidate's information — from qualifications and ranking results, to online structured interview results.
- 6) If the applicant is finally selected for the job position, his/her information (e.g. CV, resume and other information derived from the application or

interview) is automatically moved to a Human Resource Information System.

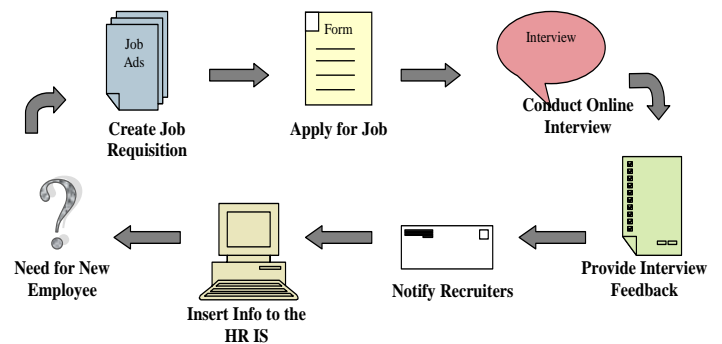


Figure1: e-Recruitment Process.

It is a view of many professional recruiters that "companies must realise that using their Web site to advertise vacancies is only one aspect what should be a comprehensive recruitment strategy". Larry Dunivan, vice president of global HR solutions with Lawson Software, agrees. "There is far more to online recruitment than simply shifting jobs onto a Web site", he says [5]. What is required is an integrated approach towards an end-to-end online recruitment process. Web-based recruitment and selection software can be used to ease this online process. By providing automatic deployment of job ads, automatic candidate screening tools, and immediate notification when a suitable application is received, the hiring process becomes shorter and more cost-effective, while the risk of losing the applicant to a competitor gets minimised.

6. Implementing online interviews: drivers and limitations

This section discusses online interviews in detail and provides a set of "centrifugal" and "centripetal" forces for their implementation. One of the objectives of this paper is providing organisations and their recruiters with all the information they need in order to decide whether to implement or not online interviews. What this paper proposes is an online solution for streamlining the screening process through the implementation of online structured interviews. The driving forces, presented in the following list, justify why organisations should adopt the proposed solution and invest on software providing online facilities for both recruitment and selection:

- ✓ Interviewing is a rather time and effort consuming activity for HR managers and generally recruiters. If there was a system automatically pre-selecting the most suitable applicants for the advertised job positions, thus decreasing the number of the final face-to-face interviews, then significant human

resources could be saved for more demanding HR activities.

- ✓ The recruitment but mainly the selection process includes a lot of decision-making activities. Automating from end-to-end the recruiting process not only shortens the hiring of new employees but also increases the speed of decision-making. Thus, a lot of decision-making bulk moves from the manager to the system.
- ✓ Questionable factors that may influence negatively the estimation of the interviewer about the interviewee must be reduced, so that interviewees are evaluated in an as objective as possible manner. Online interviews can assure that all candidates receive the same treatment and thus have equal probabilities, from the interviewer's perspective, to fill the job positions.
- ✓ As the efficiency of the company can be judged by its competence at dealing with job applications, it makes sense to have the recruitment back-office system and processes as efficient as the Web front end. Thus, online job advertising has to be supported and supplemented by an integrated e-Recruitment solution.

However strong may be the above-mentioned reasons to force the use of online interviews applications, organisations should have in mind some other worth-considering points that may impact on their final decision. These points, presented in the following list, mainly refer to limitations of online job interviews as well as their deficits to face-to-face interviews, which have been thoroughly discussed earlier in this paper:

- ✓ Face-to-face conversation is considered as the richest type of communication. On the contrary, computer-based applications have been proved to be poor communication media. Therefore, face-to-face interviews are much richer than online interviews. This makes sense since in the face-to-face contact a lot of information can be released through the speaker's body language as well as his/her vocal tone. On the Internet, none of these types of information can be provided.
- ✓ Since online interviews are highly structured interviews, candidates are not given the chance to open up and reveal useful information that may increase their assessment score.
- ✓ The artificiality of this approach may also dissuade candidates from entering into a two-way exchange of information with the interviewer by asking their own questions. Thus, the second purpose of the traditional interviews is difficult to be fulfilled in the online environment.

- ✓ In accordance with the lack of a two-way exchange of information, the interaction between candidates and recruiters is decreased on the Internet. In face-to-face interviews, candidates can usually make up what the interviewers may think of them during the interview and thus have an indication of their final score. However, in the online environment, it is rather difficult, but not impossible, to provide candidates with an immediate feedback after conducting the online interview. It requires a standardised automated scoring mechanism, the implementation of which remains a challenge for perspective online interview applications.
- ✓ While there is a solution, provided by this project, for uploading, structuring and scoring interviews containing multiple-choice questions, it is rather difficult to manage but mainly score interviews including free-text questions. Nevertheless, the majority of the questions made during a face-to-face interview require from candidates to freely provide their response rather than select one from a predefined list of acceptable answers.

Anyway, the above limitations should not be faced as holdbacks for implementing online interviews. Instead, they should be viewed as challenges posed to the research community as well as to the providers of human resource solutions for more research on and development of advanced e-Recruitment systems.

7. Impact of online interviews: benefits and pitfalls

No organisation or HR manager should expect online interviews to be a model of traditional interviews on the Internet. The above limitations refer to some of the most important differences between online and traditional interviews. At the very opposite, online job interviews can bring about numerous benefits of outmost importance for the interview stakeholders. Table 1 presents the major benefits of online interviews for job seekers and employers.

An effective implementation of online interviews requires some innovation in applying online recruitment as well as integrating it into the larger human resources mission. A common management mistake in beginning projects, implementing new processes, or changing policies, is to simple turn to the current managers and call for them to handle the new situation. Breaking a comfortable, or even an uncomfortable paradigm, will require some training.

Benefits for Job Seekers

- ✓ Ability not only to search but also to apply for a job

- quickly from any place at any time.
- ✓ Convenience in giving an interview whenever they feel ready for it.
- ✓ Time and cost savings from travelling to distant enterprises for having an interview.
- ✓ Elimination of the impact of questionable factors that influence unfavourably the interviewer's decision (e.g. first impressions, poor recording of information, personal likings).
- ✓ Elimination of the impact of undesired psychological factors that influence negatively the interviewee's behaviour and performance (e.g. stress, anxiety, lack of confidence).
- ✓ Equal opportunities for all candidates to receive the position.
- ✓ Provision of immediate interview feedback, given that an automated scoring system is implemented.

Benefits for Employers (HR Managers)

- ✓ Availability of job openings and interview questionnaires to the job seekers market on a 24 hours basis.
- ✓ Facilitation in conducting the initial screening of applicants for a job position.
- ✓ Reduction of HR costs related to the hiring process.
- ✓ Time saving for HR managers and generally employers.
- ✓ Elimination of manual processes.
- ✓ Reduction of paper overflow related to interviews.
- ✓ Ability to find quicker highly skilled employees.
- ✓ Avoidance of unqualified interviews.
- ✓ Ability to automate the processing of interview feedback, and thus take faster selection decisions.
- ✓ Improvement of relationships, information and speed throughout the hiring process. Managers are empowered to focus on candidates that matter, in order to build and manage long-term relationships with them, and on other areas of the hiring process where their skills add real value.

Table 1: Benefits of Online Job Interviews for Job Seekers and Employers.

Organisations and HR departments need an implementation plan providing the requirements, mainly in terms of changes to the organisational structure and processes, for a successful application of online interviews. The importance of training staff in order to manage the new streamlined screening process should be highlighted in this plan. In addition, the implementation plan should include benchmarks to measure the progress along each major step. The project of an online interview application can certainly progress at a slow pace with the cost justifying every step with results, and in many cases,

this is prudent and wise. However, some pitfalls may always come to light [10]:

- ✓ An early success that fuels expectations and inspires without educating the staff, leading key people to ignore the changing parameters of a talent market with many competitors.
- ✓ Administrative patterns that lock the staff, mainly recruiters, into doing distinctively new tasks while following old procedures that are painfully ineffective.
- ✓ Alliances among the staff with outside resources that resist any changes to the comfortable status quo.

Hence, the new technology that is introduced by the application of online interviews has a significant impact on the operation of the HR departments but also on the general performance of the organisation that applies it. Some significant effects of this advanced application are:

- ✓ The management of the entire recruiting process by recruiters is facilitated. The reason is that readily available and cost effective software helps them (i) place Internet job ads, (ii) receive online CVs and resumes, (iii) maintain and manage a Web-based resume database, and (iv) finally identify and classify qualified candidates that match the criteria of their job advertisements.
- ✓ Automating the screening process shortens the cycle of the hiring process but also makes the entire process more effective, allowing the company to hire the most qualified candidates.
- ✓ An online interviews application constitutes an innovation that provides organisations with a competitive advantage. Furthermore, this advantage can ensure that organisations attract and retain the best candidates, mainly in high-tech positions and the risk of losing applicants to a competitor is minimised.
- ✓ Applying online interviews for streamlining the screening process is expected to leverage the investments made on HR systems and, therefore, boost further developments (e.g. streamlining interrelated processes, training managers, etc) in the department. These developments can increase the general effectiveness of the HR department and expand its role in the organisation.
- ✓ The training function within HR becomes more integrated with the recruiting process as Human Resource Managers can assess the availability of the required qualifications and thus make more focused choices about whether to buy or develop the skills they need.

8. Proposed solution for online interviews

Organisations, and particularly HR departments, that want to obtain a competitive edge in the new technology-oriented market, have to portray their HR activities on the Web. This means that they have to streamline and transfer on the Internet their most crucial HR activities by using state-of-the-art solutions. Such a solution for automating the screening process is proposed and thoroughly discussed within the project.

In this research, an online screening application is considered to be composed of the following three modules:

- 1) Interview Module that includes operations for providing the content and structure of an electronic interview questionnaire as well as for conducting online interviews.
- 2) Scoring Module that includes operations for providing weights to questions and grades to answers, so that scoring interviewees is made possible. It is also responsible for calculating the progressive and final score of the applicant according to his/her answers to the interview questions.
- 3) Tracking Module that includes operations for enabling review of candidates' interviews, their scores, as well as other information about them (e.g. CV, resume, references, etc.).

The aforementioned modules with the associated operations for HR managers and job seekers are shown in Figure 2. The entire pyramid illustrates the domain area of online interviews.

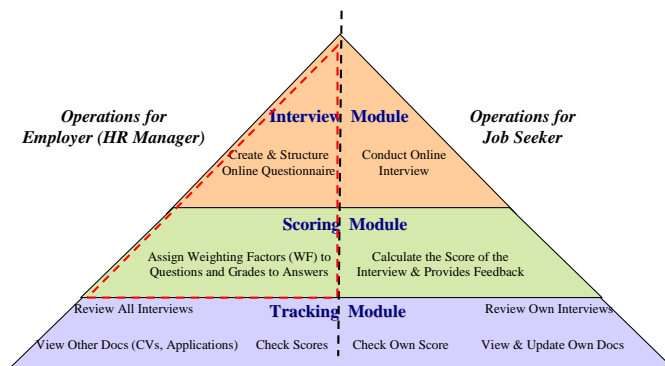


Figure 2: Basic Modules of an Online Screening Application.

9. Conclusions

In this paper a new application area for e-Business was introduced, based on the emerging Business-to-Employment (B2E) model. In more detail, the challenge

for applying advanced e-Business practices and state-of-the-art technologies in order to streamline the recruitment/selection process was revealed. Furthermore an integrated solution for the implementation of an e-Recruitment environment was described. The main suggestion for organisations that wish to achieve maximum HR value is integrating the recruitment with the selection process into an overall IT strategy for the company's HR department. In addition the concept of "Online Job Interviews" used for explaining how the screening process, which usually includes the conduct of face-to-face interviews, can go online was introduced. Finally the framework for the transition of the traditional interview process from the physical to the virtual environment was defined. More specifically, a set of "centripetal" and "centrifugal" forces for the implementation of online interviews was presented and thoroughly discussed.

10. References

- [1] N. Anderson, and V. Shackleton, *Successful Selection Interviewing*, Blackwell Publishers, 1993.
- [2] B. Bradley, *NAFTA opens more than a trade door*", in *The Wall Street Journal* (1993, Sept. 16), "The Mexican Worker", in *Business Week* (1993, Apr. 19).
- [3] W.F. Cascio, *Managing Human Resources*, McGraw-Hill, 1993.
- [4] M.J. Fraser, *Employment Interviewing*, MacDonald and Evans, 1978.
- [5] A. Gurton, "Not Always As Easy As It Seems: Company Websites for Recruitment Managers are discovering that advertising vacancies on a corporate Web site can raise unexpected problems", in *London Financial Times*, March, 2001.
- [6] Industrial Relations Services, "The state of selection: an IRS survey", in *Employee Development Bulletin* 85 (January, 1997).
- [7] R. Kalakota, and M. Robinson, *e-Business – Roadmap for Success*, Addison-Wesley Longman, 1999.
- [8] A. Nikolaou, , *Building an Integrated Electronic Job Marketplace offering the advanced service of Online Interviewing*, MSc dissertation project submitted to the University of Manchester Institute of Science and Technology, 2001.
- [9] A. Rodger, *The Seven Point Plan*, National Institute for Industrial Psychology, Paper No.1, 1952.
- [10] R. Schreyer, and J. McCarter, *The Employer's Guide to Recruiting on the Internet*, IMPACT Publications, 1998.
- [11] E. Sidney, *Managing Recruitment*, Gower House, 1988.
- [12] S. Taylor, *Employee Resourcing*, Institute of Personnel and Development, 1998.
- [13] D. Torrington, and L. Hall, *Personnel Management – A New Approach*, Prentice Hall International, 1987.
- [14] L. Walley, and M. Smith, *Deception in Selection*, John Wiley & Sons Ltd, 1998.