

University of Fribourg

Seminar Thesis

E-recruitment

Development and trends

Abstract

This paper focuses on the use of ICT, especially the Internet, in the personnel recruitment process. E-recruitment as one of the most recent recruiting tools is presented and its potential assessed and compared to traditional recruiting instruments. An overview of the e-recruitment market worldwide is given; following a classification of online job exchanges, their offered services are discussed in detail. Then, an attempt is made at determining the requirements of the optimal job exchange. In this context, the open source web shop “eSarine” is examined as a possible framework to run such a job exchange.

Keywords

e-recruitment, online recruiting, online job exchange, web shop

Name: Martin Blickenstorfer
Address: Wabersackerstrasse 109
3098 Köniz
E-mail: martin.blickenstorfer@unifr.ch
Submitted to: Referee: Prof. Dr. Andreas Meier
Supervised by: MSc. Nicolas Werro
Submitted: May 29, 2006

Table of contents

1	Introduction	1
1.1	Problem assessment.....	1
1.2	Objectives.....	1
1.3	Methodology	2
2	The personnel recruiting process.....	3
2.1	What is e-recruitment?	3
2.2	Differences with traditional personnel recruiting.....	3
2.3	Evaluation of e-recruitment.....	6
2.3.1	Strengths of e-recruitment	7
2.3.2	Weaknesses of e-recruitment	9
3	The e-recruitment market	12
3.1	Developments until today.....	12
3.2	Online job exchanges and their services	13
3.2.1	Classification of job exchanges.....	13
3.2.2	Basic services provided by job exchanges	15
3.2.3	Additional services provided by job exchanges	17
3.2.4	Benefit services provided by job exchanges	19
4	Design of an online job exchange	21
4.1	The “ideal” job exchange	21
4.2	eSarine as an online employment site?	22
4.2.1	Similarities between eSarine and a generic online job exchange.....	22
4.2.2	Necessary modifications to eSarine	24
4.2.3	Evaluation of eSarine’s suitability to serve as a job exchange	26
5	Conclusions	29
5.1	Summary	29
5.2	Outlook.....	30
	Sources.....	31

1 Introduction

1.1 Problem assessment

The Internet, without doubt one of the major innovations of the past century, has revealed an immense potential in various fields of application. The boom of information and communication technology in general and the World Wide Web in particular have led the world to shrink and opened new prospects to its users: it is now possible to send electronic mail in the blink of an eye, to order consumer goods from the home workstation or settle financial transactions without a trip to the bank, just to name a few of the new options. Administrations have also profited: the Internet and other communications technologies have made it possible for citizens to vote electronically. To companies of all business sectors and sizes, the worldwide network has opened new information, procurement and distribution channels.

As far as companies are concerned, the possibilities of the Internet reach substantially farther. In human resource management especially, a trend towards the online recruiting of staff has set in.

1.2 Objectives

E-recruitment – the recruiting of human resources over the Internet – is one of the most recent instruments available to employers in order to find suitable employees. Many job exchanges are already present on the Web and the number of job seekers making use of this means of application is growing rapidly. The objective of this paper is to show today's developments in personnel recruiting, to give an overview of the current situation on the e-recruitment market and to present some of the recent trends. In particular, an insight is provided into the possibilities of using the open source web shop "eSarine" as a basis to run an online job exchange.

1.3 Methodology

Initially, e-recruitment is considered as a partial process of personnel-recruiting; the notion of e-recruitment is to be defined and the differences compared to traditional recruiting instruments are to be shown. In a second step, e-recruitment will be evaluated with regard to strengths and weaknesses, first from the perspective of the job seekers and second from the employers' point of view.

Then, a look is taken at the development of the very dynamic market for online job exchanges. The focus is put on the provided basic services and the additional services offered, through which the job exchanges try to gain an advantage in the struggle for market share.

Considering the multitude of job exchanges on the Internet, an attempt is made at defining some essential factors for their success. The web shop eSarine is examined for similarities with a generic job exchange; necessary modifications to eSarine in order to run an online job exchange are also identified.

2 The personnel recruiting process

2.1 *What is e-recruitment?*

Defined in a broad sense, e-recruitment, also known as “Internet recruitment”, “online recruitment”, “e-cruiting” or “cybercruiting”, is “the formal sourcing of job information online.”¹ The term applies when at least one step of the job-seeking process is carried out through electronic media, for instance a job seeker retrieving information about open positions online or contacting a potential employer per e-mail. Although any electronic medium is covered, e-recruitment most often implies use of the Internet.

E-recruitment is one of the most recent recruiting tools: online recruiting is first mentioned in articles of the mid-1980s and systematic references in human resource (HR) journals followed almost a decade later, in the mid-1990s, when IT companies and universities began using the Internet extensively.² During the past years, e-recruitment has established itself on a large scale and thus been widely accepted as a new recruiting instrument. While in 1998, 29% of the world’s largest companies published job offers on the corporate website almost 80% did so by 2000. In 2003, 94% of the top 500 firms worldwide ran a career site on their homepage.³ The volume of the e-recruitment market is growing extremely fast: expenditures for online recruiting in Europe alone were estimated to have soared from £50 million in 1999 to £3.8 billion in 2005.⁴

2.2 *Differences with traditional personnel recruiting*

A company’s human resources are considered one of its most valuable assets, if not the most valuable. Even though nowadays the fluctuation rates are higher and the average job duration is shorter today than it was some thirty years ago, firms try to create a strong bond between them and their staff. The goal is to get employees to relate to their employer and thus convey the corporate behavior to the general public. Accordingly, a company gives its personnel

¹ [Galanaki 2002, p. 243].

² Cf. [Galanaki 2002, p. 243].

³ Cf. [iLogos 2003, p. 3].

⁴ Cf. [Galanaki 2002, p. 243].

recruiting process particular attention. Once the required amount of human resources has been assessed in the personnel planning phase, the HR-managers must choose the suitable candidates, meaning the ones that best match both qualifications and corporate culture.

The following section aims to depict the main aspects that separate e-recruitment from the traditional personnel recruiting process. In this case, the expression “traditional” has no negative connotation whatsoever, but is used solely to describe the methods used in recruiting before the existence of electronic alternatives. In particular, the different sub-processes of personnel recruiting are to be scanned for digitalization potential.

The classical personnel recruiting process is depicted in illustration 1. It remains relevant regardless of the use of traditional recruiting tools or e-recruitment. The individual steps of the process are followed independently of the medium applied.⁵ If at least one of these steps is digitalized, one speaks of e-recruitment.

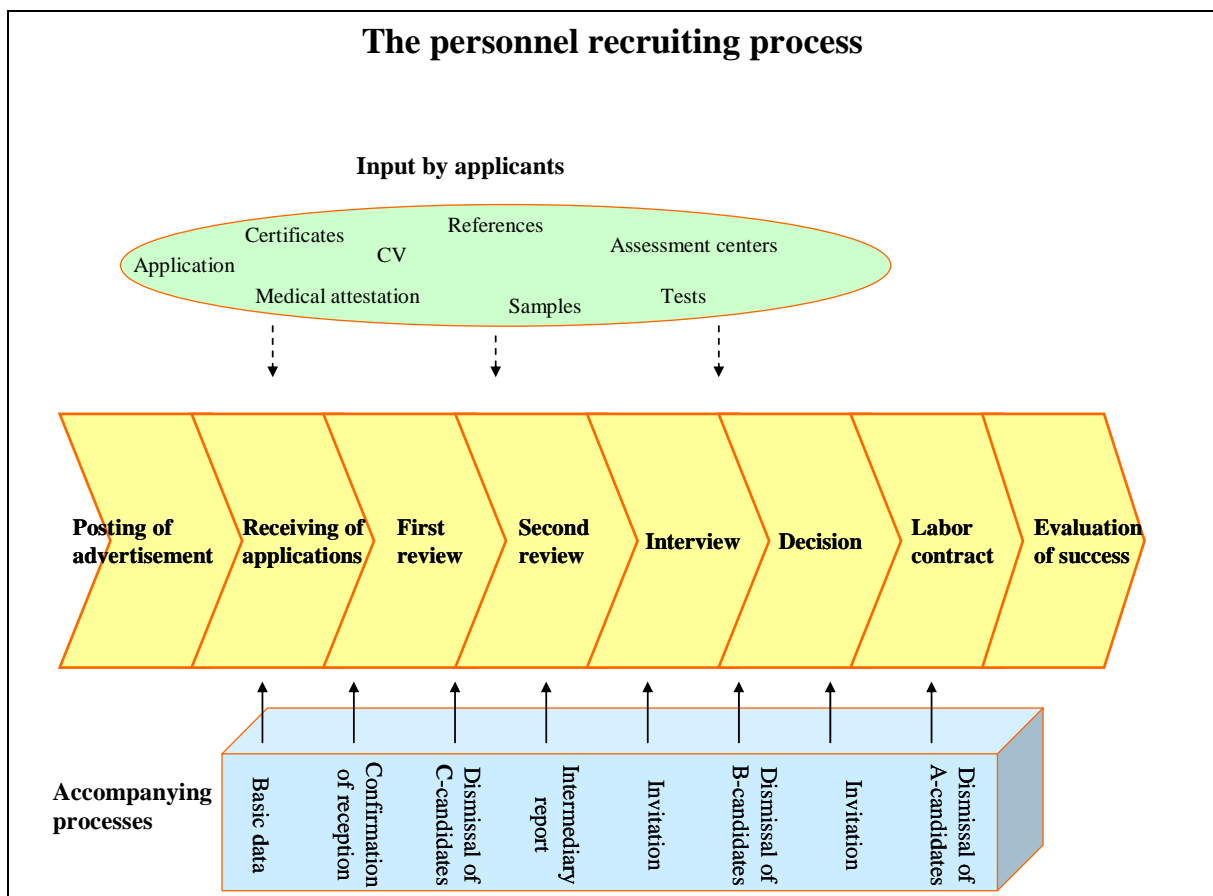


Illustration 1: The personnel recruiting process⁶

⁵ Cf. [Beck 2002, p. 19].

⁶ According to [Beck 2002, p. 19]

Nowadays, the first step of the process, the posting of advertisements, is already provided digitally by many companies in addition to traditional advertisements in print media. Employers publish open positions directly on their company's website or post an advertisement with one of the many Internet-based job platforms, which will be discussed further on in this paper. Electronic advertisements boast the advantage that no limits apply as to the length of a text and cost is substantially lower compared to their counterparts in print media. Another benefit not to be underestimated is the possibility to adjust or delete any advertisements once a position has been filled, thus reducing the number of received applications.

The second step of the process, accepting the applications, is at least partially digitalized in many large firms. This opens a new possibility for job seekers to send in their application. However, many employers still require candidates to provide certain documents (e.g. diplomas or employment certificates) on paper.

In the case of the process of first and second reviews, in addition to the known methods of evaluating résumés, e-recruitment makes automated applicant screening possible. There also lies some digitalization potential in the following step, the interview, for example in order to make the most of time and save costs. An interview can be held without the physical presence of the candidate, for instance via webcam or telephone conference. If and under which circumstances the use of the described methods can be advantageous is discussed further on.

The process of decision-making cannot be completely digitalized, as it is to be assumed that in the foreseeable future, decisions will continue to be made by humans. Electronic aids can, however, be used to assist in the decision-making process (e.g. decision support systems). In the electronic era, it is not unusual to engage in negotiations regardless of location and time and once binding laws on digital signatures will apply, signing labor contracts digitally will become part of the contract phase of the process.

The final phase of the process, evaluating the success of the newly hired candidate, is of prime importance. Today, cost effectiveness and exact measurement of results are required virtually in every process of a particular business. Since manual review of a newly hired candidate's performance in the traditional recruiting process is extremely time consuming and expensive, many companies don't even do it any more. E-recruitment allows an automated

and continuous review of a hired candidate's aptness by comparing the initially required qualifications (profile as required in the advertisement) and the actual performance of the new employee (ex post evaluation). In addition, e-recruitment enables HR-managers to assess the success of a particular job advertisement based on the amount of received applications in order to locate potential for improvement in view of future recruiting cycles.⁷

If desired, e-recruitment can also increase the interactivity between job seekers and potential employers because digital communication is easier, faster and cheaper.

The progressing digitalization of the recruiting process has also affected the process-supporting instruments depicted in illustration 1. Some, such as the increased portability of documents (e.g. diplomas, CVs, medical attestations) have developed with the introduction of digital media. Others, first and foremost all internet-based selection instruments such as online tests and online assessment centers or additional services provided on HR-websites such as online games have been made possible in the first place. A few of these services will be dealt with in section 3.2.

In summary, it can be said that technological advancement offers quite a few possibilities for application in the field of personnel recruiting. Nevertheless, at least until today, e-recruitment hasn't quite been able to replace the classical recruiting instruments completely. Rather, it is used complementarily by providing additional options for the sub-processes. The following section analyzes the strengths and weaknesses of e-recruitment more closely.

2.3 Evaluation of e-recruitment

Section 2.2 focused on practical realization of e-recruitment in the personnel recruiting process, although without judging it. A qualitative evaluation of internet-based recruiting is now to follow.

⁷ Cf. [Beck 2002, p. 21].

2.3.1 Strengths of e-recruitment

Greater reach and better matching-accuracy

The targeted public for classical job advertisements in print media is often limited to a region; a supra-regional newspaper can attract readers on a national scale at best. If the Internet is introduced as a medium, the reach suddenly expands to the global scale. A job advertisement online is not bound to a specific location. The targeted audience now includes every Internet user. E-recruiting isn't bound to any times: job advertisements can remain posted until the offered position is filled. Further, contrarily to print media, where advertisements must be republished periodically, online job announcements are available at any time. The flexibility of the World Wide Web is a significant advantage, also as far as language-barriers are concerned: the use of e-recruitment allows an advertising employer to post his job offers in multiple languages, at hardly any additional cost, but thus considerably increasing the reach of his advertisements.

It is obvious, that a worldwide target group must not necessarily be advantageous, especially if the employing company has a strong regional focus and no branches abroad. However, statistics confirm that an increasing number of job seekers first refer to the Internet, when looking for available jobs. In Germany, for instance, 38% of employed people consider searching for a job online as "very important", the figure having increased by 13% between 2001 and 2005.⁸ Accordingly, employers which are present online are certain to receive a greater number of applications. This raises the recruiter's odds of finding an apt candidate and vice versa: e-recruitment encourages efficient matching.

Lower Cost

The cost-saving potential of e-recruitment compared to traditional personnel recruiting is threefold: firstly, supplying the required job-related information is cheaper than with classical print media. The publication of available jobs on a corporate website generates no costs worth stating and the posting of job offers with an online job exchange is also considerably less costly than an advertisement in a newspaper or magazine. The reason for this lies in the fact that a restriction as to the number of words or characters in an advertisement doesn't necessarily apply whereas the already high prices for a print-advertisement increase with its length. E-recruitment generates lower costs for candidate selection as well. The use of

⁸ Cf. [Jobware 2005].

electronic allows employers to deal more efficiently with the overflow of received applications: automated screening-processes let unsuitable candidates drop out early, webcam-dialogues and video conferences guarantee a high degree of flexibility of time- and location-independence for interviews. Finally, e-recruitment enables compensation of costs due to lost productivity of a vacant position. The use of electronic recruiting instruments reduces the time invested in HR management by 25% to 30%.⁹ In particular, the length of a recruiting cycle can be significantly reduced through faster electronic communication and independency from time and place.

Attraction of passive job seekers

E-recruitment gives a company the opportunity to attract talented job-beginners or already successful professionals that are not currently looking for a job – at least no actively.

With most online job exchanges, job seekers can post their CV or save a complete application file in a database and thus give recruiting employers access to an amount of information considered unthinkable in the era of print media. These job seekers are referred to as passive candidates, because they do not apply actively to a potential employer but simply make their résumé available, hoping to be contacted by a recruiting company. Indeed, many HR-employees, so called “recruiters”, scan the online CV-databases in search of passive candidates. Upon completion of a database-search, some online job platforms even display the congruency of an applicant’s profile and the requirements of the open position, which enables interested companies to search even more precisely for competent contenders.¹⁰

More and more, recruiters are after individuals that aren’t in any way applying for a job, apart maybe from possessing special skills or having achieved something extraordinary, but who would nonetheless be willing to accept an attractive offer. Shand calls such talented professionals “[...] the most highly prized catch by recruiters.”¹¹ Indeed, these people aren’t easy to find: since their résumés aren’t stored in any online job-database, simply searching these isn’t enough. In the best case, these individuals have a personal homepage where they publish their CV, inform about gained professional experience or further fields of expertise and personal achievements that can be of value in a future job and thus offer potential employers a possibility to contact them. In certain cases however, recruiters only have a name

⁹ Cf. [Workforce 2000, p. 103].

¹⁰ Cf. [Beck 2002, p. 51].

¹¹ [Shand 2000, p. 50]

or e-mail address to follow and the desired candidate may be working for a competing firm. If this is the case, a job offer or even contacting an employee is ethically questionable at best. More details on this issue are discussed in section 2.3.2.

2.3.2 Weaknesses of e-recruitment

Data security

It has already been established to what extent the Internet has affected communication in personnel recruiting. It has been observed to have become more dynamical fundamentally, since information can be transmitted more quickly. In consequence, general opinion states that an application should be run through multiple channels in order to succeed. This can happen in the form of a simultaneous application via electronic and traditional media, the posting of a résumé with different online job exchanges or by directly contacting various companies on their corporate career sites. This practice bears a certain risk, however: some firms have been known to share résumés with partner-companies without the explicit permission of the candidate.¹² If someone applies directly on a company's homepage, it is usually in response to a specific job offer by that same firm. The passing-on of personal information on applicants is highly dubious and companies making use of such practices operate in a gray legal area at best. Job seekers rightly consider such action as an abuse of their trust and diminish the acceptance of e-recruitment as a whole. The problem subsides if the application process runs through a third party, for instance if a job seeker posts his résumé with an online job exchange. In this case, the candidate wishes his dossier to be seen by as many potential employers as possible in order to increase his chances of finding an attractive job.

Ethical issues

A new appearance that has emerged in the course of e-recruitment's development is the enticing away of employees from competitors. This highly doubtful practice is most common between high-tech firms, especially in places where many of these are clustered in a comparatively small area, like it is the case in Silicon Valley near San Francisco, for instance. Highly talented employees of such technology companies are greatly valued and aggressively sought after; recruiters get in touch with them in the parking lot before or after work, or contact them per telephone or e-mail (called "cold e-mailing" in reference to the term "cold

¹² Cf. [Thaler-Carter 1998].

calling”¹³). Recruiters are also known to contact a candidate’s employer directly under a false identity. HR-managers attempt to tone down the issue by guaranteeing not to try to entice away entire design teams; however, they insist that such professionals are too valuable not to attempt to hire single team members.¹⁴

Automated screening

In section 2.3.1, the positive aspects of e-recruitment’s greater reach were discussed: a substantially higher amount of received applications leaves an employer with a wider choice of qualified candidates but of course, manual evaluation of the dossiers is accordingly more time-consuming. It has been mentioned, that for personnel pre-selection or selection e-recruitment provides the possibility of automated screening, which would immensely reduce the time necessary for the analysis of résumés. With manual evaluation, the application dossiers are analyzed and compared based on certain criteria by people, whereas with automated screening, a specially created résumé-database is thoroughly searched for specific key words. If the defined key word isn’t found in a given dossier, the corresponding candidate drops out of the selection pool. This method is known as “key word search” and although it is becoming increasingly popular, it doesn’t necessarily turn out the desired results. When applying this technique, the definition of the key words is of prime importance and should be based on a detailed analysis of the open position by managers with the required expertise. The risk of inaccurate, subjective or biased selection criteria is especially significant if the decision lies with a single person.¹⁵ In order to avoid the selection process being invalid or illegal, the defined criteria must be job-related and clearly respect the restrictions of labor law and meet international standards. A further weakness of key word search lies in the fact that candidates can – willingly or not – influence the outcome of the database search. Depending on writing style or written expression of the application, a potentially qualified candidate can drop out of the selection pool simply because a certain term or phrase doesn’t appear in his dossier. On the other hand, this method can lead to the recruiting of an insufficiently qualified applicant whose resume contain the desired key words.

Compared to traditional personnel recruiting tools, e-recruitment boasts several important advantages, especially as far as time and cost of the recruitment process itself are concerned.

¹³ Cold calling: in sales, cold calling is the contacting, mostly per telephone, of potential customers without their explicit consent.

¹⁴ Cf. [Kuczinski 1999].

¹⁵ Cf. [Mohamed et al. 2002].

The Internet as a new medium grants companies access to a global talent market at an excessively low price. In this sense, online recruitment is a true enhancement for human resources division. Its weaknesses lie mainly in its efficient use and implementation. Above all, the focus must be laid on data protection when exchanging such sensitive information as job applications including CVs over such a dynamic medium as the Internet. In order to maintain and even increase the users' level of trust in e-recruitment, all concerned parties are requested to apply the existing laws and thus set internationally respected standards.

3 The e-recruitment market

3.1 *Developments until today*

The e-recruitment market has grown rapidly in the past few years. The development is simultaneous with that of Internet usage, which is a prerequisite for online recruiting. Already in 2005, a little over 68% of US citizens and 49% of EU citizens used the Internet on a regular basis. In Asia, the average was 9%; the disparity between countries was enormous, however: in Myanmar, only 0.1% of the population uses the Internet, whereas in South Korea, over 65% do. In Switzerland, almost 65% of the population uses the Internet regularly.¹⁶ According to Forrester Research, the volume of the e-recruitment-market in the United States alone amounts to four billion US-dollars.¹⁷ Forrester Research estimates the potential of the European market to be significantly higher still and was numbered at eight billion euros for 2003.¹⁸

Considering these growth prospects, it is no surprise that in the past few years, many online job exchanges have tried to prevail on the market. In countries with substantial labor markets, the diversity of such job platforms is especially large. As of December 2005, over 700 online job exchanges were available in the United States and 821 could be counted for Germany. Some 40 platforms (as of the end of 2005) have also specialized in the Swiss job market. The figures show a very fragmented picture of online job platforms and the market is accordingly dynamic. Many small job exchanges focusing on specific businesses or fields of activity appear on the market, only to be taken over by larger competitors. The past couple of years were characterized by many mergers and takeovers and this trend is expected to carry on. Meanwhile, a number of platforms have established themselves on the market and boast a certain size. Overall, there are still too many players, however, and that is why a further wave of consolidations seems unavoidable.

The market for e-recruitment-services is directly linked to the labor market and hence is very sensitive to the developments of the business cycle. In times of a recession, job exchanges greatly suffer from a decline in posted advertisements due to a receding demand for labor. In

¹⁶ Cf. [Internet World Stats].

¹⁷ Cf. [Aschenbeck 2002].

¹⁸ Cf. [Monster.de 2001].

addition, the tough competition requires considerable spending for the development of new products and services as well as marketing.¹⁹ Therefore it is no surprise that until recently, very few online job exchanges were operating profitably, especially in Europe. In most cases, success can be achieved by focusing on a specific business or through sheer size. Monster.com, for example, a job exchange operating worldwide and running websites in 25 countries, has acquired numerous firms and has recorded a positive result for the second consecutive business year in 2005.

3.2 Online job exchanges and their services

3.2.1 Classification of job exchanges

According to Beck, job exchanges on the Internet can be categorized by different criteria. One possibility is the differentiation of commercial and non-commercial job exchanges. The latter include the available platforms of employment offices (e.g. www.treffpunkt-arbeit.ch, www.arbeitsamt.de), graduate schools or universities and other organizations which offer a job platform as an additional service and whose main objective is not to yield a profit. The commercial job exchanges include all private-sector companies whose core business involves the sale of employment services. The most well-known are career platforms (e.g. www.monster.com, www.stepstone.de, www.jobscout24.ch) which provide a complete service for both job seekers and employers in search of labor. So-called multipliers are also part of the private-sector job exchanges. These are electronic job exchanges which condense existing job requests and advertisements and make them available in a single online database on a common platform. Also to be mentioned are media-portals, the online job platforms of newspapers, journals or magazines, that have adapted their printed advertisements to the Internet era (e.g. <http://jobmarket.nytimes.com>, <http://stellenmarkt.sueddeutsche.de>).²⁰ Another example of a possible form for private-sector job platforms that have a regional focus is the franchise concept, which allows its members to profit from economies of scale by sharing a common brand and web-appearance (e.g. www.personal-total.de).

Another possibility of categorizing online job exchanges is to distinguish between general and specialized or cross-business and business-specific providers. There are also job exchanges

¹⁹ Cf. [Beck 2002, p. 27].

²⁰ Cf. [Beck 2002, p. 36].

which focus on a specific career-phase. In addition, there are job exchanges with their own and/or without their own offer of services. Whereas most online job platforms provide their own advertisements, meta-search-engines (also known as robots or spiders) use the available information from other job platforms. The meta-search-engine www.jobworld.de, for example, accesses the databases of twenty-two (as of December 2005) different job exchanges and presents the job seeker with the results. Another special case of private-sector job information platforms are companies' HR-portals. These provide users with general information regarding labor law or tips for a successful application without displaying any specific job offers. Traffic partnerships are cooperations between job exchanges and frequently visited web-portals with the aiming of profiting from synergies: the online job platform increases its reach considerably and the web-portal can expand its range of offered services. A good example hereof is the initial collaboration of HotJobs and Yahoo! (<http://hotjobs.yahoo.com>), even though in the meantime, HotJobs has been taken over by Yahoo!. In Switzerland, the job platform Jobwinner has integrated its Portal into the frequently hit portals of Tages-Anzeiger (<http://tagesanzeiger.jobwinner.ch>) or the free newspaper 20 Minuten (<http://20min.jobwinner.ch>). So called duplicate job exchanges are an additional example of private-sector job platforms: the term refers to the double posting of a job platform under two different domain names without providing any additional benefit. On the contrary, this could lead to confusion among job seekers. The job agent should not go unmentioned and refers to a job exchange that uses a different revenue-calculation model. While most online job exchanges generate their profits from posted advertisements, job agents base their income on an applicant's future salary.²¹ Illustration 2 provides an overview over the classification of job exchanges according to Crosswater Systems Ltd. Although the classification is based on the German labor market, it can be applied correspondingly to many other labor markets.

²¹ Cf. [Crosswater Systems 2005, p. 25].

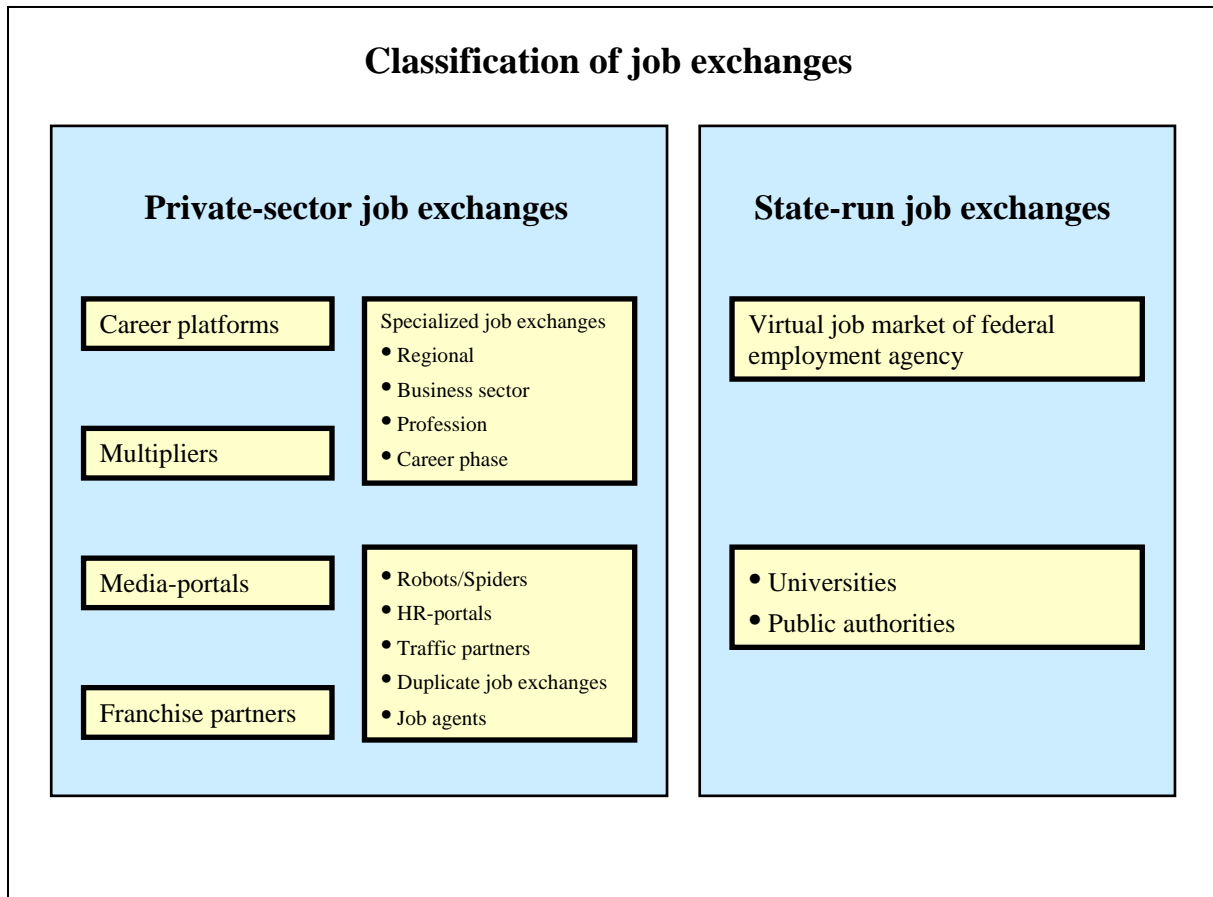


Illustration 2: Classification of job exchanges²²

3.2.2 Basic services provided by job exchanges

Basic services include all functionalities and services that are directly related to synchronizing and meeting the needs of labor supply and demand.²³ In other words, the core function of online job exchanges is to coordinate labor offer and its corresponding demand and vice versa. These services may be a basic condition for market success but they by no means guarantee it. In today's competitive markets, a supplier can hardly distinguish himself by simply providing these generic products or services. In order to gain a competitive edge, a web-based job exchange must add useful and innovative additional or benefit services. These are to be discussed in detail further on. The next section presenting the various forms of services offered by job exchanges closely follows the enumeration found in [Beck 2002, pp. 45-79].

²² According to [Crosswater Systems 2005, p. 24].

²³ Cf. [Beck 2002, p. 45].

Basic service includes the direct publication of job offers and job requests or the access to a job database. In this context, a powerful search engine is of prime importance as the successful matching of job supply and demand depends on it.

- **Job offers**

From a job seeker's point of view, the appeal of an online job exchange generally lies in the quality and the quantity of job offers available, for a larger number of available positions increases the chances of finding a job. The exceptions are job exchanges that focus on certain industries only and make up for volume through more specific targeting of certain candidates. Regarding quantity, determining the exact number of jobs available on a given platform is not always easy because not all job exchanges differentiate between local, national or international job offers. Depending on the job seeker's mobility however, this can be a major factor in the choice of the online job platform. As far as quality is concerned, it is also difficult to assess for there are no objective criteria to measure it. It is important that a job offer be complete, accurate and up to date. Today, all larger job exchanges update their database daily. All available jobs on a particular platform can be viewed directly free of charge or following a free registration.

- **Posting of job requests and CVs**

Whereas recruiting through traditional media focused primarily on posting job offers in newspapers or magazines, e-recruitment offers a major improvement by allowing the posting of job requests or the saving of CVs in an online database. As mentioned earlier, the flexibility of such an instrument is considerable, thus constantly guaranteeing a high degree of timeliness and quality of the information provided. This, on one hand, enables job seekers to make an up-to-date version of their complete job application available on the web while on the other hand giving the companies in need of human resources access to a new source of information.

Online recruiting has altered the employers' approach to recruiting new employees: in the past, their role in searching for qualified staff was mainly a passive one, publishing advertisements for open positions and waiting for job seekers to respond to them. Since they have access to databases, they can actively search for suitable applicants themselves. Whereas in the past it was unavoidable for companies to publish open positions, the access to "application-databases" has somewhat lessened the pressure and has led some firms to cease

posting job advertisements altogether, mainly for financial reasons. In turn, this has shifted some of the pressure to the job seeker's shoulders, since the fact of not placing his résumé in such a database can be a serious disadvantage in his search for the right job.²⁴

- **Advertising service**

As a further basic service, job exchanges offer the online publishing of job advertisements. They distinguish between standard advertisements that simply need to be fed into the system and linked to key words and specialized ads that customers can customize, for instance by choosing between different layouts, colors etc. Some brokers also provide multi-channeling options which allow the posting of a specific ad on multiple platforms enabling advertisers to take into account regional or national differences.²⁵

3.2.3 Additional services provided by job exchanges

Additional services refer to all offered services designed to directly or indirectly support the recruiting process. These can be technical or personal as well as information-based services.

- **Process support**

Several job exchanges provide ASP-based²⁶ recruiting solutions for their customers, for example standardized software for corporations or specialized solutions for recruiting agencies that allow HR-managers to use software solutions based on the workflow approach to the recruitment process without having to integrate it into the firm's existing IT-system. Such tools increase the recruiting process' degree of automation, ranging from the development of the job profile to the design of the advertisement to the invitation of a potential employee to reporting.

- **Support of the in-house job market**

For companies willing to launch or maintain their own job market, job exchanges offer to take over the task of installing and hosting such a job market, which is very demanding from a labor or technological point of view and therefore presents quite some cost-saving potential. The service is installed in such a manner that, without requiring user access to a firm's

²⁴ Cf. [Beck 2002, p. 51].

²⁵ Cf. [Beck 2002, p. 54].

²⁶ ASP: Application Service Providing

website or altering it, job offers posted on the job exchange's web platform are simultaneously published on the firm's own website in the firm's own design.

- **Career consulting or coaching**

This service allows job seekers to directly contact a career consultant by telephone in order to receive expert information regarding their application or career. Some job exchanges offer online training for job seekers: users can test themselves, regarding answer patterns in interviews. Alternatively, job seekers receive tips and suggestions for a successful application or they have the possibility to download checklists for every stage of the application process. Also available online are a variety of tools allowing users to evaluate their current situation concerning values, but also strengths and weaknesses. These tools are not to be considered as tests but rather as an orientation help in assessing one's own abilities. Other platforms go as far as running complete "application centers", providing job applicants with a wide array of information beyond the process of the application, namely about strategy, wages, contract law or the career start.

- **Personality test**

This tool allows users to establish their personal "competency report" by means of a questionnaire testing job-relevant key competencies such as flexibility, teamwork and team leadership, self-confidence or analytical thinking.²⁷ This not only presents an additional service for job seekers, but for employers as well, as they can require candidates to complete the test as part of an application.

- **Additional databases**

In addition to the mentioned job-databases, many job exchanges run specialized databases focusing only on internships, apprenticeships, temporary jobs (e.g. for students) or research projects such as a Master thesis or Ph. D.

- **Corporate information**

The possibility of acquiring information online about a specific company is offered by most job exchanges, which post a list of the advertising companies with links to their corporate websites. For companies without a homepage, job exchanges also offer the installation of a website on their server. Further, some platforms provide firm records for users requiring

²⁷ [Beck 2002, pp. 59-60]

specific information about a corporation. These records usually list companies in alphabetical order but can be browsed by multiple criteria such as business sector, turnover, number of employees, region etc. The user can then access the basic data of each of the companies matching the required search criteria. Monster.com takes corporate information to another level with web casting. This allows a company to present itself online to potential applicants by means of video, audio and text and gives candidates the opportunity to ask questions to and receive answers from a HR manager.

3.2.4 Benefit services provided by job exchanges

Whereas the basic and additional services provided by online job exchanges focus on synchronizing supply and demand of human resources, benefit services encourage users to return to a certain website regularly. These services do not present benefits directly related to the recruiting process, but rather make use of the advantages of the Internet by providing a variety of information, often in cooperation with partners.

- **Legal advice for employees and employers**

Online job exchanges consider it a challenge to keep their information section on legal issues up to date. For example, they offer information about labor law, labor contracts (including examples), employment certificates (including examples) and court rulings in labor cases as well as specialized articles on current topics, sometimes with the possibility to discuss these subjects in chat rooms.

- **Newsletter**

Nowadays, subscription to newsletters is available on almost every website wishing web-users to return. In this particular case, newsletters intensify the bond between job platforms and its users, informing them of the latest changes and novelties or providing links for further reading. Some platforms also include information about upcoming job fairs, meetings conventions, workshops or seminars in their newsletter.

- **Chats and newsgroups**

Apart from the classical chat-room abilities, job platforms give job seekers the possibility to meet with industry representatives to discuss a given topic, thus giving both candidates and recruiting companies to present themselves and establish first contact towards a possible

common future. A further development of such chat-rooms is the virtual job fair, where job seekers can contact advertising employers and receive firsthand information in order to facilitate the first steps of their career, as well as directly hand in their application. Chat-rooms also help job exchanges assess the needs of their customers (job seekers as well as companies) in order to complete their offer of services.

Many discussions are also staged in newsgroups where users can choose between a wide range of topics and share their views or questions with others. These discussions are often led by a moderator, sometimes an expert in a specific field of research providing practical advice or concrete insights from which even passive users can profit.

- **Polls**

Some online job platforms regularly conduct polls on a certain topic, questioning users on their job-related habits. The results can provide useful information and constitute a further incentive for the interested and involved user to return to the website.

- **Wage comparison and calculators**

Many online job platforms provide information regarding wages. Some offer wage-tests as an interactive service based on a questionnaire to be filled out by the user, others allow job seekers to compare wages on an international scale, depending on country, job and career status. Other wage-related services include net-gross and gross-net wage calculators, displaying payroll accounting depending on gross income, state of residence, social security payments etc. Other calculators enable users to determine the health insurance contributions or the amount of income tax due.

4 Design of an online job exchange

4.1 The “ideal” job exchange

Defining the “ideal” structure and design of an online job exchange is possible in theory; however it is a quite difficult matter. On one hand, it depends significantly on the point of view of the evaluator and on the other hand, the success of the process, meaning the synchronization of supply and demand of labor doesn’t depend solely on the job exchange. Outside factors such as the overall economic situation as well as developments on the labor market or even job seekers’ personal preferences also have a considerable influence.²⁸

For both online job exchanges and company-specific recruiting websites, it is possible to define certain key elements necessary for a HR-website’s success, without guaranteeing it by any means. From a formal perspective, a website should be easy to find and navigate, have a good layout, be multilingual and timely and ensure data protection.

The open-source web shop eSarine was initially developed by the Information Systems Research Group of the University of Fribourg for small and medium-sized businesses that wished to use the Internet as an additional distribution channel. The requirements for such a web shop included user-friendliness, multi-language-support, few constraints in defining the range of products offered and the possibility to address customers or users individually and respond accordingly to their needs.²⁹ The benefit for both businesses and their customers is manifold. From a company’s point of view, the web shop enables interaction with its customers through standardized processes while building up individual relationships at the same time (e.g. discounts based on a purchasing habits). In addition, a catalog system guarantees a high degree of flexibility for supply and inventory issues, making it easier to manage product categories or to add and remove specific products on offer and when stock is low, the system automatically places an order with the supplier. From a consumer perspective, a web shop offers many interesting features unavailable in a traditional shop. Besides the fact that a web shop is open twenty-four per day, it offers product descriptions in multiple

²⁸ Cf. [Beck 2002, pp. 101-102].

²⁹ Cf. [Frauchiger et al. 2004, p. 3-4].

languages, provides additional information regarding available items and can even display the quantity in stock in real time.

Considering the requirements of the ideal online job exchange and the features of a web shop such as eSarine, certain similarities can be recognized. In the following section eSarine will be examined for elements and functions which could be transferred to an online job exchange or career-website. Based on this evidence, necessary adjustments and restrictions will be identified.

4.2 eSarine as an online employment site?

4.2.1 Similarities between eSarine and a generic online job exchange

When advertising goods and services over the Internet, one of the challenges is to present them in an easily accessible, attractive manner. eSarine displays products in a concise, well-structured fashion; the homepage gives an overview of available items and invites the user to browse the shop by different criteria. Alternatively, potential customers can select the search function to obtain more precise results. It lies in the interest of an online job exchange to group and list its job advertisements or its résumés in such a way that an intuitive search provides the desired results. The homepage, for instance, could display the most recent open positions or newly added CVs and a navigation bar would allow users to access their specific area of interest (e.g. “internships”, “part-time jobs”, “senior executives” etc.). An example is given in illustration 3. The website must include an elaborate search function, permitting the user to refine the results of his query. Examples hereof might be the search by job title, by age, by region, by wage or any combination of available search criteria.

The screenshot displays the eSarine website interface. At the top right, there are links for 'Anmelden', 'Registrieren', and 'Ihr Warenkorb'. Below these is a search bar with a 'Suche' button and the text 'Erweiterte Suche'. The main navigation menu on the left lists various categories: Marketing, Personalwirtschaft, Unternehmensberatung, Engineering, Project Management, Software developer, Gastronomie, Finanzanalyse, and Wirtschaftsprüfer. The main content area shows three job advertisements:

- Pricing Manager** (DHL logo): In dieser Funktion sind Sie für folgende Hauptaufgaben verantwortlich: Führung und Betreuung des Pricing Teams (3 Mitarbeitende) Mitwirken bei der Preisstrategie sowie der Preispolitik Erste...
- Food Technologist** (Nestle logo): We are looking for a strong specialist who wants to join a successful team, and play a focal role in the product development, and wish to recruit a food technologist who will lead as R&D project manag...
- Software Consultant für Fahrzeugdiagnose** (SIEMENS logo): Ohne Automatisierung verschonen wir Spielraum. Ohne Antrieb steht die Zukunft still. Mit über 51.000 Mitarbeitern weltweit setzen wir als Bereich Automation & Drives mit innovativen Produkten, Systeme...

At the bottom left, there is a copyright notice: 'Copyright (C) 2004 University of Fribourg, Switzerland'.

Illustration 3: Display of newly added job advertisements.

Similarly to a web shop offering a quicker checkout or payment process for returning customers, a job exchange requires the user to provide a minimum amount of personal data by establishing a profile when posting a job advertisement (in the employer's perspective) or saving a résumé (job seeker's perspective). Firstly, this enables him to access and edit saved data, or post new data more quickly. Secondly, registration is also necessary for the job exchange to establish contact between employers posting an advertisement and interested applicants as well as between job seekers having saved their résumé and interested recruiters. Thirdly, registration enables a certain level of trust as well as a secure, meaning encrypted environment to complete transactions involving credit card numbers and bank account or billing information. When pricing models are considered, certain differences between eSarine and an online job exchange become apparent. When buying a product in a web shop, the customer is charged a unit price per item purchased; the same can be applicable for a job exchange if an employer pays a fee for every advertisement posted. However, for a recruiter needing to post advertisements regularly, a fee per length of time or a fixed-price plan including several advertisements may be a more cost-efficient solution.

Whereas most consumer goods sold over the Internet still need to be physically delivered, the services bought and sold through an online job exchange are mostly intangible. This somewhat facilitates the distribution process; no elaborate logistics system is required, as

most goods in question (résumés, advertisements etc.) can be made available for download or transferred per e-mail. Hence uninterrupted service availability can be mostly guaranteed and shipping and delivery times and costs are no issue.

4.2.2 Necessary modifications to eSarine

It has been shown that a number of similarities exist between a web shop and an online job exchange and that eSarine can perform the core functions necessary to run such a job exchange. In the following section, a closer look is taken at the design of a specific product description page or rather its equivalent for a job exchange, namely a job advertisement page.

The product description page's layout is mainly determined by multiple input fields located at predefined positions on the web page. When adding or removing displayed products, the administrator must only complete the desired input fields, one of which is a depiction of the product (e.g. packshot). For the example in illustration 4, completed input fields include "product name", "product description", "price" or "ISBN" etc. Correspondingly, such input fields could be adapted to suit the needs of a job description page, thus displaying a digital job advertisement, as shown in illustration 5. In the header of an online job advertisement, a brief overview of the job in question is usually given in table form, stating the recruiting firm's name, the title of the job and an advertisement or reference number among other information. For this purpose, input fields are most suitable since the type of data displayed in the header hardly varies and can thus conveniently be standardized. Following the introductory header, a detailed job description can just as well be formatted using input fields. In replacement of a specific product's illustration, the advertising company can post its logo in order to trigger recognition effects with the job seeker. Further suitable input fields for a job advertisement could be "job description", "required training", "required experience", "prospects for personal development", "initial salary", "start of work", "place of work" and "contact information".

Anmelden | Registrieren | Ihr Warenkorb


asarine

Erweiterte Suche

>> Startseite > Bücher

Drama
Jugendbücher

Der Turm



29.90 CHF
Am Lager
In den Warenkorb legen!

Beschreibung : Kings wichtigstes Werk findet seinen krönenden Abschluss Der neue große Roman von Stephen King ist gleichzeitig das grandiose Finale seines Zyklus um den Dunklen Turm. Sein Held Roland, der Revolvermann, und seine Gefährten sind am Ende eines langen Weges angekommen. Über dreißig Jahre hat Stephen King an seinem Opus magnum im Geiste und auf Papier gefeilt und geschrieben. Nun steht sein Held, der Revolvermann Roland, vor dem 'Dunklen Turm', wo seine Suche endet. Mit 'Der Turm' liefert Stephen King das große Finale eines Romanzyklus, der schon jetzt als moderner Klassiker gilt und in einem Atemzug mit 'Der Herr der Ringe' genannt werden muss.

Autor : Stephen King
Anzahl Seiten : 800 Seiten
Verleger : Heyne
ISBN : 345300096X

Copyright (C) 2004 University of Fribourg, Switzerland

Illustration 4: Product description page from eSarine.

Anmelden | Registrieren | Ihr Warenkorb


asarine

Erweiterte Suche

>> Startseite > Stellen

Marketing
Human Resources
Unternehmensberatung
Engineering
Wirtschaftsprüfer
Gastronomie

Software Consultant für Fahrzeugdiagnose



Beschreibung : Die Automobilbranche prägt wie keine andere die Automatisierungslandschaft und ist damit für Automation and Drives ein sehr bedeutsames Geschäftssegment. Sie haben Drive? Dann gestalten Sie mit uns die Zukunft!

Anforderungsprofil : Mit einem (Fach)Hochschulstudium Richtung Elektrotechnik, Systemtechnik oder Mechatronik haben Sie sich das nötige Basiswissen angeeignet. Sie haben mindestens 3 Jahre aktive Erfahrungen in der Softwareerstellung von Steuerungen mittels Ladder Programmierung (KOP) gewonnen. Sie sind sich gewohnt selbständig zu arbeiten, können aber auch in einem Team eine wichtige Rolle spielen. Sie zeichnen sich aus durch eine kreative aber trotzdem exakte und systematische Arbeitsweise. Wenn Sie zusätzlich auch noch gute Englischkenntnisse in Wort und Schrift und eventuell sogar Französischkenntnisse haben, dann sind Sie unser Mann.

Was wir bieten : Es erwartet Sie eine dynamische Gruppe von Steuerungsfachleuten und ein Unternehmen, das technisch und technologisch an vorderster Fron steht. Eine anspruchsvolle Aufgabe, attraktive Anstellungsbedingungen mit einem mitarbeiterorientierten Umfeld, sowie eine reizvolle Umgebung runden das Bild ab.

Pensum : 100%
Arbeitsort : Zürich
Anfangslohn : CHF 65'000.-
Kontakt : Siemens Schweiz AG, Freilagerstrasse 40, 8047 Zürich; Tel. +41 (0) 585 585 585, jobs.ch@siemens.com

Copyright (C) 2004 University of Fribourg, Switzerland

Illustration 5: Job description page using eSarine.

Finally, after having read an advertisement, job seekers require the possibility to become active, be it by applying for the described position directly or by requesting additional information regarding the future employer or the job itself. For this purpose, eSarine's shopping cart could be modified. As an alternative to "add to shopping cart" or "check-out", a job seeker's options for any particular advertisement could include "add to my job list", "request additional information" or "apply". The above-mentioned "my job list" could be a modification of the shopping cart: instead of listing products retained for purchase, eSarine would list job advertisements to which an applicant has taken particular interest and that he has wished to save for later consultation. Alternately, by clicking on "apply", a job seeker can initiate the application process by instructing the online job exchange to relay his interest to the potential employer who can then establish contact with the candidate.

If viewed from the opposite perspective, the product description page can be turned into a "candidate description page". It has been shown that many online job exchanges offer the possibility to save résumés in their database. Similarly to the structure of a job description page, a job seeker can conveniently revert to input fields in order to format his job request or application file. The header is bound to remain similar to those of job advertisements, citing general information. Possible input fields for the résumé itself might be "personal details", "education", "acquired diplomas", "professional experience" or "additional skills" etc. In replacement of the web shop's "add to shopping cart"-button, "contact candidate" may be a suitable option for an employer to get in touch with a job seeker whose application matches his requirement.

4.2.3 Evaluation of eSarine's suitability to serve as a job exchange

In section 4.1, several formal criteria essential to an online job exchange were identified. They include ease of navigation, multilingualism, timeliness and data protection. The intuitively structured web shop and the concise layout of a product description page guarantees ease of navigation. The use of input fields not only gives the page a defined structure and allows browsing users to keep an overview, but it enables administrators to edit and add data in easy, standardized procedures. All the while, input fields also serve the criterion of multilingualism; they facilitate the addition of information in any desired language. The requirement of timeliness, a key factor for the dynamic medium of the Internet can also be met by eSarine because it allows easy addition, removal and editing of the range of products on offer. As far as data protection is concerned, a web shop is naturally expected to meet high security

standards as it deals with confidential information (names, addresses, credit card information, shopping habits etc.) on a regular basis and therefore provides the required data protection measures. In the eSarine web shop, this issue is addressed by defining an administrator who has the sole right to edit the web shop's catalogue of products and to access customer information. If eSarine were to be used effectively as a job exchange, however, multiple individuals (e.g. HR managers or assistants reviewing applications) would be required to gain access to job seekers' information.

As it is, eSarine's web shop framework meets the essential criteria defined in section 4.1 and can thus be considered as a suitable basis for an online job exchange. However, this only applies to features described as basic services in section 3.2.2. Yet, today's online job exchanges are required to offer innovative extra services in order to remain attractive to its customers and distinguish themselves from competitors. As described in section 3.2.3, "process support" and "support of the in-house job-market" are two of a number of additional services often provided by online job exchanges. Both become obsolete with the implementation of eSarine as a job exchange; since one of the great advantages of eSarine is its ease of use, it would allow businesses to run their own job exchange, granting them independence from a commercial e-recruitment specialist and necessary support services. Since administrating databases is one of eSarine's core functions, the feature "additional databases" would be readily available in an eSarine-based job exchange. However, given the scope of numerous databases containing résumés and job advertisements in multiple languages and business sectors, eSarine's search function would need to be elaborated to maintain ease of navigation. Elements which could easily be added to eSarine include a newsletter for interested job seekers, a FAQ and help section or web polls. An example hereof is depicted in illustration 6. A feature which would certainly increase eSarine's attractiveness is the possibility for a recruiting company to customize its job advertisements in order to convey their corporate identity. Other features, such as the additional services "personality test", "corporate information" or the benefit service "wage comparison and calculator" could be integrated into eSarine without major difficulties, at least from a strictly technical point of view. However, such extra features, often Java or Flash applets, are not native to eSarine and require additional programming know-how. This, in turn would reduce the attractiveness of eSarine as an easy to use online job exchange for small and medium-sized businesses.

Anmelden | Registrieren | Ihr Warenkorb

asarine

Erweiterte Suche

>> Startseite > Stellen

Marketing
Human Resources
Engineering
Wirtschaftsprüfer
Gastronomie

Support

Beschreibung : In this section, you will find answers to many of the questions you may have. If your question is no listed here, feel free to contact us by e-mail.

How do I register? : To register, click on "Register" on eSarine's homepage.

How much does the posting of an advertisement cost? : The prices of advertisements and our price plans can be viewed by clicking on "Prices".

Can I edit posted advertisements? : Yes, you may edit posted advertisements by logging on to your eSarine account.

Can I customize my advertisements? : Yes, eSarine provides a number of customization options available upon registration.

How long will my advertisement remain online? : Your advertisement will remain online for as long as you specify, or for a maximum time period of 3 months.

What is a job request? : If you are interested in a specific job advertisement, you may contact the advertiser by sending him a job request.

Can an employer see my personal data? : No. At eSarine, we take data protection very seriously. We will not forward your personal data to anyone without your formal consent.

I have forgotten my password. What can I do? : Click on "Remind me of my password" and enter your e-mail address. You will receive an e-mail with your password shortly.

Which browsers does your website support? : Microsoft Internet Explorer (5.0 and higher), Netscape (7.1 and higher), Apple Safari (1.2 and higher)

Copyright (C) 2004 University of Fribourg, Switzerland

Illustration 6: Example of a job exchange's support section.

eSarine provides an attractive basis for an elementary online job exchange. It meets all the necessary requirements to offer good basic as well as a number of additional services. For small and medium-sized businesses, this positions eSarine as a possible alternative to commercial online job exchanges; for larger companies, eSarine might serve as a job exchange for in-house purposes. However, if a job exchange with a comprehensive offer of additional and benefit services is required, eSarine can no longer provide the desired user-friendliness. A typical trade-off between functionality and ease of use becomes necessary.

5 Conclusions

5.1 Summary

In the wake of the Internet's rapid expansion at the end of the twentieth century and its continuing success story at the beginning of the twenty-first, there is hardly a profession that hasn't been affected by the innovations of the World Wide Web. In the private sector, firms have quickly seized the opportunity provided by ICT of developing new markets abroad for procuring and distributing goods and services. In recent years, prospects of using the Internet to recruit human resources have been discovered and many firms have been able to capitalize on this opportunity. The market for e-recruitment is a fast-growing one where trends are going from the support of traditional personnel recruiting processes by ICT to fully electronic recruiting cycles. Indeed, in comparison to traditional recruiting methods, e-recruiting has helped employers improve the quality of the recruiting process while lowering the recruiting time and costs. However, e-recruiting has its downsides as well; in this respect, data protection is one of the major issues that need to be addressed if e-recruitment is to find a broad acceptance. Other problems include the ethical aspects of the increasing number of enticements fostered by modern means of communication.

Although the e-recruitment market is growing virtually in all economies worldwide, e-recruitment has developed quickest in countries and regions boasting both significant labor markets and a high coverage of Internet access. Hence, the greatest variety of online job exchanges and HR-websites can be found in Europe and North America where the market for these job-related websites are very competitive. Job-related websites differ greatly in form of organization as well as size and scope. Offered services range from basic services such as the listing of job advertisements to elaborate features including career consulting, personality test or wage calculators.

Although eSarine was developed with the goal of providing an open source web shop for small and medium-sized businesses, it boasts the ability to perform the functions necessary for the basic services of an online job exchange. Its structured layout and the use of input fields make eSarine an easy to use solution for a job exchange on a small or in-house scale,

attractive to both job seekers and employers; yet eSarine's benefits don't show to advantage if used to run a full service recruitment site.

5.2 Outlook

Considering the fact that the Internet's success is far from reaching an end and research in the field of ICT produces improvements or innovations almost daily, e-recruiting is destined to become a widespread success story in the near future. The number of providers already in business today gives an estimate of the optimism and potential of the e-recruitment-services market. Demand is bound to grow: with globalization making the world smaller and the pressure to succeed ever increasing, companies are continuously searching for ways to save time and reduce costs in all of their divisions. In this sense, e-recruitment can contribute in the field of human resources by further standardizing processes and increasing efficiency. However, it remains questionable whether the decision of recruiting a qualified candidate for a specific position is one that can be entirely assigned to an automatic process and many employers are reluctant to rely solely on automated screening. But e-recruitment is a process consisting of multiple elements, many of which are, already today, widely used in the personnel recruitment process. In consequence, the near future will most likely see e-recruitment-instruments as a complement to existing ones, increasing the quality of job-related decisions. Many of the services provided by online job exchanges and HR-websites aim to support job seekers prior to and during the application process and are already being widely used. In order for e-recruitment as a fully automated recruiting process to receive complete acceptance, changes in employers' and job seekers' mindsets will need to take place. In the foreseeable future personnel-related decisions of greater magnitude will most likely still have to be taken by human beings.

Sources

- [Aschenbeck 2002] Aschenbeck, Arndt: Schnell zum neuen Job klicken. – Warum Internet-Stellenmärkte eine Konkurrenz für die etablierten Personalvermittler werden können. Financial Times Deutschland, 12. January 2002.
- [Beck 2002] Beck, Christoph: Professionelles E-Recruitment: Strategien – Instrumente – Beispiele. Luchterhand Verlag, Neuwied, Kriftel 2002.
- [Crosswater Systems 2005] Crosswater Systems Ltd.: Die Jobbörsen in Deutschland. Crosswater Job Guide, Dossier #4: Marktübersicht Jobbörsen und Ranglisten, 31. January 2005, Version 1.0.8.
- [Frauchiger et al. 2004] Frauchiger, Daniel; Meier, Andreas; Stormer, Henrik; Werro, Nicolas: Zur Entwicklung des Struts-basierten Webshops eSarine. HMD – Praxis der Wirtschaftsinformatik, Vol. 41, No. 238 (2004).
- [Galanaki 2002] Galanaki, Eleanna: The decision to recruit online: a descriptive study. Career Development International, Vol. 7, No. 4 (2002), pp. 243-251.
- [iLogos 2003] iLogos Research: Global 500 Website Recruiting. Available: https://www.ilogos.com/en/ilogosreports/iLogosReport2003/secure/index.php/iLogos_Global500_03_Report.pdf?dnld=1&IDhash=eb8d01e0d6c7654f883bf878b60878af&/iLogos_Global500_03_Report.pdf, accessed 22. November 2005.
- [Internet World Stats] Internet World Stats. Available: <http://www.internetworldstats.com/index.html>, accessed 28. March 2006.

- [Jobware 2005] Jobware: Auf dem Vormarsch: Jobsuche via Internet. Press release of 27. April 2005. Available: <http://www.jobware.de/pz/pm/meldungen/111.html>, accessed 28. March 2006.
- [Kucznski 1999] Kucznski, Sherry: You've got job offers. HRMagazine, Vol. 44, No. 3 (1999), pp. 50-57.
- [Mohamed et al. 2002] Mohamed, A. Amin; Orife John N.; Wibowo Kustim: The legality of key word search as a personnel selection tool. Employee Relations, Vol. 24, No. 5 (2002), pp. 516-522.
- [Monster.de 2001] Monster.de: Wenn das Monster kommt. Auszug aus „Euro am Sonntag“ vom 01. Juli 2001. Available: <http://www.monster.de/about/presse/spiegel/20010701b/>, accessed 28. March 2006.
- [Shand 2000] Shand, Dawne: The Passive/Aggressive Job Seeker. Recruiters are desperate for the IT pros who are working, not looking. Computerworld (April 2000), pp. 50-51.
- [Thaler-Carter 1998] Thaler-Carter, Ruth E.: Recruiting through the Web: better or just bigger? HRMagazine, Vol. 43, No. 12 (1998), pp. 61-67.
- [Workforce 2000] Anonymous: What's up with Internet recruiting? Workforce, Vol. 79, No. 3 (2000), pp. 100-112.