E-Assessment

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1 IT-supported personnel selection

Computers have been used in the recruitment process to assess the suitability of applicants for more than 40 years. The motivation for introducing computer-supported selection of applicants first lay in its ability to save time as well as to improve the quality of the selection process, which is intended to be achieved by a combination of computer-based selection procedures with conventional processes such as, for example, job interviews. User groups typical of this early phase of computer-supported assessment of suitability were state run labor market institutions and the military (Bartram 2000; Konradt and Sarges 2003).

With the increasingly broad use of the Internet in the later 1990s the attractivity of this medium for finding staff (employer side) and job-seeking (employee side) also grew. The enormous rise in user-numbers led many businesses to realize that the Internet represented a new resource for the search for suitable employees for their recruitment procedures. At the same time, the increased use of the Internet by companies resulted in job-seekers recognizing the web's potential (Bartram 2000; Konradt and Sarges 2003). These factors, in combination with the wide reach of the Internet, led to a significant increase in the number of applications. On the recruitment side, the problem of filtering the most suitable candidates out of this increasing flood of applications arose. Traditional selection methods, with or without computer support, were of only limited use in these circumstances, since they were conditioned by time and place. The advantages mentioned above (time-saving and a qualitative improvement in selection processes) were thus offset by higher costs and increased organizational effort, since it would have been necessary for every applicant to take part in the selection process at a specific time and in a specific place. Consequently, the idea appeared of carrying out selection processes online – and therefore independent of time or place, which would normally require personal contact (Kupka 2008). This "computerized 'enhanced' testing" (Konradt and Sarges 2003) is the basis of current e-assessment in the field of personnel recruitment.

2 E-assessment for personnel preselection

2.1 Concepts and modes of procedure

Internet-supported processes for the evaluation and prediction of relevant biographical and psychological variables in order to assess the suitability of a candidate for a particular job position can, in terms of personnel recruitment, be grouped under the heading of e-assessment[1] (Konradt and Sarges 2003; Kupka 2008). The basic goal of e-assessment in the context of personnel preselection is to generate a limited shortlist of suitable candidates by means of an Internet-based comparison of the skills and abilities of the applicants with the requirements of a job-profile (Bartram 2000; Buzzetto-More and Alade 2006).

The instruments used to diagnose suitability, which also include e-assessment procedures, can be classified in terms of their methodology: a distinction is made between the attribute approach, the simulation approach and the biographical approach. The attribute approach can be used to assess personal characteristics regarded as relatively stable (e.g. language-related intelligence, interests, conscientiousness). The simulation approach is intended to capture the behavior of an individual in situations of a kind that might be expected in the work environment. An individual's biographical data are collected by the method of the same name (Schuler and Höft 2006). **Fig. 1** illustrates the three above-mentioned approaches to suitability assessment in the special context of e-assessment. Typical measurement procedures included in the attribute approach are psychological tests, such as personality, attitude or motivation tests. These procedures were first developed as pencil-and-paper tests, and were later also expanded to include (offline) computer support. One element of current e-assessment is the recent transfer of this kind of test to the Internet. A classical form of the simulation approach is a test exercise in which problems related to particular work situations have to be solved. These tests comprise simulations of typical job-orientated scenarios which the applicant has to deal with. They were also initially carried out without the use of technical aids, before Internet-supported processes were introduced. As far as the biographical approach is concerned, one

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[1] In this article we use the concepts e-assessment and online assessment synonymously, in a way analogous to Hertel and Konradt (2004).
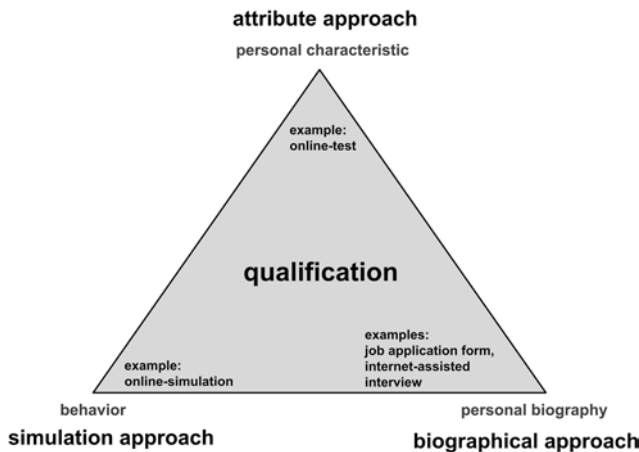
Fig. 1 E-assessment – approaches to suitability assessment (based on Schuler and Höft 2006, and Kupka 2008)

can initially distinguish between questionnaire-based and interview-based processes. Questionnaire-based processes elicit classical biographical data such as educational history or professional experience using a standardized web form. Interview-oriented e-assessment methods include, for example, video-conferencing or internet-supported interviews, which provide an alternative to telephone-conferencing or personal interviews.

The best candidates among all the applications received can be identified by a systematic combination of the individual suitability-assessment approaches, so that all relevant facets of an individual applicant can be discovered (Hertel and Konradt 2004; Kupka 2008; Schuler and Höft 2006).

2.2 Advantages and disadvantages

E-assessment methods used for preselection within the recruitment process possess a number of advantages compared with offline processes like the classical recruitment centre. We will present the most important ones below (Hertel and Konradt 2004; Kupka 2008).

Independence of time and place

Taking part in online simulations or online tests as well as filling in web forms, generally takes place independently of time and place. The only limitation on time is provided by the deadline, set by the company, by which the e-assessment must have taken place. Within this time framework, applicants can take part in the e-assessment processes whenever they wish. One exception to this rule is the Internet-supported interview, which requires the parties involved to appoint a particular time. Beside the increased flexibility on the applicant side provided by this independence of time and place, also a benefit for the company arises, above all from simplified and more flexible administrative processes. Thus, for example, an online test only has to be set up once at the beginning of the testing period, and further administrative tasks can be carried out online by a single person independently of his or her location.

Potential savings

E-assessment processes have the potential to produce savings, in comparison to offline suitability-assessment processes. Thus online simulations or online tests save time for the company compared with similar offline methods, since there is no need to organize a physical time and place for the procedure. This independence of place also means further potential savings in terms of space, material and personnel. Applicants also save the expense of travelling to an event that requires their actual presence.

Compared with traditional selection methods in staff recruitment, we can however state the following disadvantages of e-assessment processes (Hertel and Konradt 2004; Kupka 2008):

Manipulation of test results

The fact that e-assessments like online simulations or tests do not require the personal presence of the applicant at a particular place makes it possible for them to deceive or mislead the company. For example, someone taking part in these tests may possibly be helped by a third party, or the person taking the test may not be who s/he claims to be. The negative effects of this kind of manipulation can usually be dealt with, since normally there are personal interviews with candidates before a final decision to employ them is taken.

Technical factors

If e-assessment methods are required for preselection of applicants, then one needs to ensure that all applicants have access to a computer with the requisite systems as well as a sufficiently powerful Internet connection. It is also necessary to set up clear rules for procedures in case of Internet-connection crashes so that the applicant, wherever possible, does not have to go through the whole e-assessment process again and to prevent the employer from ending up with redundant results.

Resource requirements

The introduction of e-assessment systems is generally connected with relatively extensive use of resources (e.g. the implementation and introduction of online simulations or technical adjustments to the system necessary for introducing web application forms into the firm's own web site). With this in mind, the question of whether it is worthwhile for a company to introduce individual e-assessment processes is decisive. The answer to this question depends to a large degree on the number of applications likely to be received.

2.3 The status quo in German companies

After considering the advantages and disadvantages of e-assessment, let us have a look at the actual usage of e-assessment in terms of simulation tests on the employer side. We see that, overall, the development of IT-supported selection processes is still in its infancy. For 2008 only 7.6 per cent of the 1,000 biggest companies in Germany reported that they already have e-assessment systems, and a further 7.6 per cent reported that they plan to do the same (see **Fig. 2**). An analysis of the potential expected from e-assessment suggests that these are mostly improvements in respect

usage of e-assessment
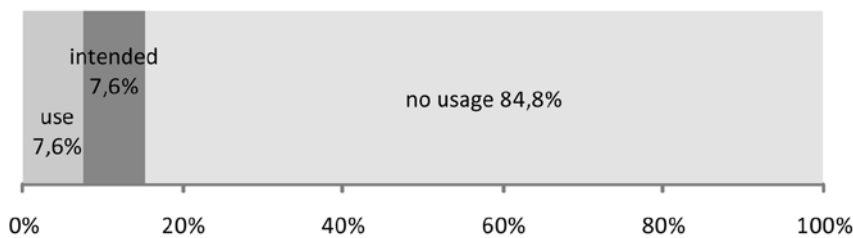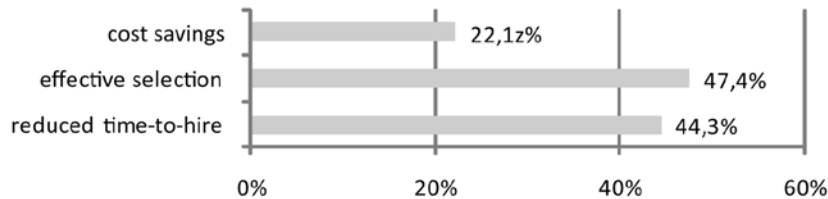

reasons to use e-assessment

Fig. 2 E-assessment – usage and potential of online simulations

of costs, time and quality (Laumer et al. 2009). Thus 44.3 per cent expect to shorten the time-to-hire, 47.4 per cent expect improvements in the quality of applicant assessment and 22.1 per cent expect a decrease of costs (see **Fig. 2**). A further advantage suggested by those responsible for personnel in the 1,000 biggest companies in Germany is that e-assessment helps them to discover and assess soft skills (communication skills, personality, social compatibility) early on in the selection process (Eckhardt et al. 2008).

3 Outlook

As shown by the empirical results of the preceding section, the use of e-assessment in terms of online simulation is only just beginning, and user numbers are relatively small. Nevertheless, two additional advantages support the idea that e-assessment has great intrinsic potential for recruitment procedures. Firstly, e-assessment can easily be integrated as one process step into a holistic e-recruiting system, where it – linked to recommender systems – provides either an effective tool for preselection of large quantities of applications (Buzzetto-More and Alade 2006) or the basis for the creation of workgroups (Malinowski et al. 2008). Secondly, e-assessment can support the creation of a positive employer brand (Phillips 1998).

This is illustrated by the example of one of the largest European publishing houses which, by offering e-assessment processes, was able to increase not only the frequency of perfect fits between applicants and the posts available, but also the total number of users of their own website and the career portal that it contains (Laumer et al. 2009). The increased user frequency was due to the fact that users of the online simulations had recommended them to friends, acquaintances and others in their personal networks as exciting and informative. In future research, e-assessment should be discussed as not just a virtual selection instrument, but also as an effective means of *employer branding*.

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