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## HAVE INFORMATION AND COMMUNICATION TECHNOLOGIES AND THE INTERNET REALLY CHANGED EMPLOYABILITY; JOB SEARCH AND SELECTION AND RECRUITMENT PROCESSES?<sup>21</sup>

### **Introduction**<sup>22</sup>

The adoption of the Europe 2020 strategy puts social policy at the core of EU economic strategy for the first time. The EU has set social headline targets for raising the employment rate, reducing early school leaving,

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<sup>21</sup> The views expressed are those of the authors and may not in any circumstances be regarded as stating an official position of the European Commission. Neither the European Commission nor any person acting on behalf of the Commission is responsible for the use which might be made of this paper.

<sup>22</sup> This article is based on a literature review on ICT, Employability and Inclusion contracted by EC JRC-IPTS and carried out in 2012 by the Institute of Employment Research, University of Warwick, UK. In particular from: Green A E, de Hoyos M, Barnes S-A, Owen D, Baldauf B and Behle H. Literature Review on Employability, Inclusion and ICT, Report 2: ICT and Employability. Centeno C, Stewart J (Eds.). JRC Technical Report Series, EUR 25792 EN.

increasing the number of people who complete tertiary education or the equivalent and lifting at least 20 million people out of poverty.

However, the economic crisis has made it harder to meet the Europe 2020 targets: employment has suffered in most Member States and disparities in the employment and social situations of Member States have been growing. Some 26.6 million people were unemployed in the EU28 in July 2013. Nearly a quarter of economically active young people in Europe are unemployed: 23.4% (5.6 million) in the EU28 in July 2013 (Eurostat). Poverty and social exclusion have been rising since 2009, especially in southern and eastern European Member States (EC, 2013b).

Paradoxically, these high unemployment levels co-exist with important numbers of unfilled vacancies, particularly in the ICT sector. Here, it is estimated that the number of unfilled vacancies due to the shortage of people with the required ICT skills will reach 700,000 by 2015 in Europe. In this context, the following policy questions have become crucial: how can the supply-demand mismatch in Europe be effectively addressed? How can it be ensured that people, particularly young people, are 'employable' - i.e., prepared and in a position to do the jobs offered? And how can adequate support be provided to enterprises and labour market intermediaries to allow them to cost-effectively recruit and select new employees?

Information and Communication technologies (ICTs) and the skills to use them are becoming an ever more important feature of work, education and learning and social participation. Furthermore, the European Centre for the Development of Vocational Training (CEDEFOP, 2010) estimates that by 2020, 85% of jobs will require some sort of Information and Communication Technology skills (CEDEFOP, 2010). It is therefore worth exploring in more detail the current role of ICTs in addressing the above questions, particularly as regards the role of digital inclusion, ICT skills, and ICT-based tools and services for job seekers, employers and labour market intermediaries. It is also important to understand how policy could help realise the potential of ICTs in addressing these pressing challenges.

Unfortunately, a comprehensive picture of current practice and potential of ICTs has not been available until now to help answer these questions. As an initial step in 2012, the JRC-IPTS commissioned the Employment Research Institute at the University of Warwick (UK) to produce a review of the literature on ICTs and Employability<sup>23</sup>. This review examined the concept of employability, its dimensions and the factors which affect it, in general and for groups at risk of exclusion, namely migrants, young people and older

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<sup>23</sup> More information about the project can be found on JRC-IPTS ICT for employability webpage: <http://is.jrc.ec.europa.eu/pages/EAP/eInclusion/employability.html>.

workers. It also provided evidence on how ICT contributes to the employability of all, as well as that of the above three specific groups at risk of exclusion.

## Unpacking the concept of employability

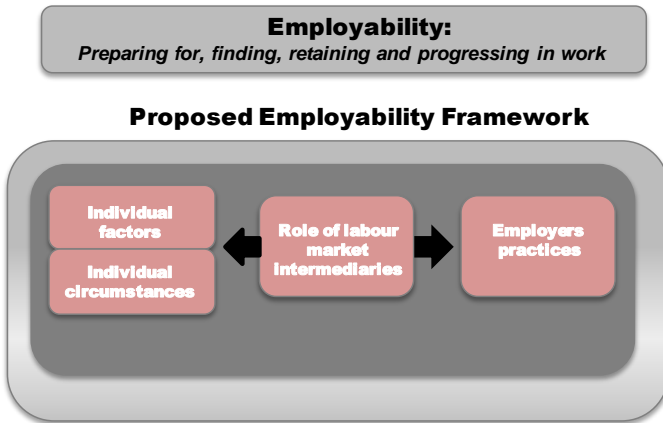
The concept of employability has been developed formally and in practice over many years, but remains an evolving idea. Moving away from an earlier, narrow perspective of employability as dependent (only) on individual skills and attitudes, the literature review suggests that a much broader concept of employability is now in use. We can define employability as "preparing for, finding, retaining and progressing in work". A broad employability framework is now proposed that categorises the many factors shaping employability in 6 clusters (see Figure 1).

- individual factors, such as demographic characteristics, health and wellbeing, economic position, attitudes, labour market and job-seeking knowledge, adaptability and mobility, specific and transversal skills that enhance employability and also perceived employability;
- individual circumstances, such as household composition and care responsibilities, household work culture (including whether there is a culture in which skills development is encouraged), access to resources (including access to different types of capital, including ICT);

- enabling support factors, where intermediaries in public, private and voluntary sectors play a key role in providing support to individuals such as training provision, career information, advice and guidance support services; providing support to employers and influencing local training/skills policy and, more broadly, in respect of lobbying for changes in institutional and regulatory factors which impinge on employability;
- Employers practices, such as organisational culture - commitment to skills development and the adoption of high performance working practices that encourage productivity though job satisfaction and empowerment; recruitment and selection practices; human resources management practices, including, provision of training, encouraging lifelong learning, and providing an environment in which skills can be utilised and developed; and working practices, e.g. the adoption of flexible working practices (which might enhance opportunities for employment for some individuals);
- Local contextual factors, such as features of local employment (including the type, quantity, quality and location of jobs), local work culture (i.e. the neighbourhood context and local norms and aspirations); and local labour market operation and norms;
- Macro level factors, such as the regulatory and welfare regimes and institutional factors,

employment policies and active labour market programmes, and macro-economic factors.

Figure 1: Proposed employability framework



The literature provides evidence that ICT contributes to employability mainly through three of the employability factor clusters: individual factors, the role of intermediaries and employers' practices.

### **ICT skills strongly support employability**

A key finding of the literature review is that ICT skills or digital competence have become crucial for the employability of individuals, as they positively affect a number of individual factors relevant for employability. Firstly, there is an increasing demand in the labour market for ICT skills, which increases employability of

those who have and use them. ICT skills also increase people's aspirations (Garrido et al., 2009), and gives them access to more and better jobs (Eurofound, 2012) (i.e. more creative jobs where they can further develop their skills, enhance their career prospects and earn higher wages (EC, 2013b)). Moreover, ICT skills facilitate peoples' access to the labour market as they help them to develop job search skills and search for jobs more effectively, reducing the time they are unemployed<sup>24</sup> and the probability that they will be discouraged in their job search<sup>25</sup>.

Indeed, job search is facilitated by ICTs, as they allow people to search a broader geographical area and research company information. At the same time, internet job search is associated with more intensive job search, as Internet supplements other methods (Parry and Tyson, 2008; Stevenson 2009), making the search more effective. From a complementary perspective, ICT skills provide opportunities for people to develop social networks, which allow them to build weak ties, which can be of key importance for job search.

Furthermore, there is evidence that developing ICT skills and competence empowers individuals, helping them to

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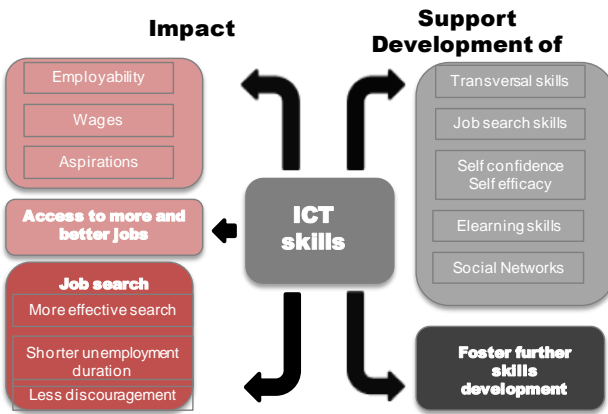
<sup>24</sup> In 1998-2000 and 2008-2009 USA Census Population Survey analysed by: Kuhn/Skuterud (2004); Kuhn/Mansour (2011); Hadass (2003); Nakamura Alice O. et al. (2009).

<sup>25</sup> USA CPS, 2003 and 2009 analysed by Ford (2011), showed that Internet job seekers were half as likely to give up searching.

develop self-confidence, self-efficacy, and other skills, such as transversal skills (social networking, collaboration, problem solving, language skills) and eLearning skills, all useful for employability. Finally, the acquisition of ICT skills fosters further skills development, motivating ICT learners to pursue other types of education.

The figure 2 below summarizes the different dimensions of how ICT skills do support employability.

Figure 2: How ICT skills affect employability



The ICT skills or digital competence identified as supporting employability are more than just “ICT operational skills”. They include broader dimensions, such as the ability to manage and evaluate information,



to communicate, collaborate and participate with online tools, and the ability to create content and to protect one's own data and privacy<sup>26</sup>.

In the light of the above findings, it becomes crucial that we understand, when designing policy, which key actors will help learners/job seekers develop these competences. In this respect, this review and other studies have identified the following challenges:

- Formal education actors (schools, colleges, universities and the work environment) play an important role in enhancing ICT skills for those participating in formal education. There are, however, concerns regarding the impact of the schools divide on learners' ICT skills development.
- Non-formal education actors, including third sector organisations and other labour market intermediaries such as public employment services, play a crucial role in providing ICT skills for those with no or basic skills or who are out of formal education or unemployed (Rissola and Centeno, 2011). However, these actors often lack the competences to properly fulfill this increasingly

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<sup>26</sup> As proposed by the EC JRC-IPTS research project DIGICOMP (2010-2012) which objectives have been: to *Identify* the key components of Digital Competence (DC) in terms of the knowledge, skills and attitudes needed to be digitally competent; and to *Develop* a DC framework/guidelines that can be validated at European level, taking into account relevant frameworks currently available. See here: <http://is.jrc.ec.europa.eu/pages/EAP/DIGICOMP.html>.

important role, for which they are not generally recognised.

### **ICTs affect and support the role of Labour Market Intermediaries**

Many types of organisations play an important cross-cutting role in shaping employability: we can call them Labour Market Intermediaries (LMIs). They include public and private sector job centres and recruitment agencies, voluntary sector organisations, trades unions, national and local employer associations / business organisations, local and regional authorities, and sectoral and professional bodies. These provide support to individuals and employers, shaping the employment conditions. More concretely, for individuals, they provide support along the ‘employability pathways’ – from pre-employment training (for economically inactive and long-term unemployed individuals) and other training provision (impacting on employability at the individual level), through signposting to non-employment support services (thus influencing individuals’ circumstances), to job matching and job broking (thus impinging on local labour market operation). Enabling support factors driven by these intermediaries also encompass provision of support to employers and their role in influencing local training and skills policies and, more broadly, in lobbying for changes

in institutional and regulatory factors which impinge on employability.

The pervasive penetration of ICT in the labour market is transforming the role and services that LMIs offer to both job seekers and employers. LMIs are now offering new employability services to job seekers and e-recruitment, e-screening and e-selection services to employers. They are also offering ICT-based supply-demand job matching services. In addition, LMIs are playing an increasing role in providing basic ICT skills to job seekers, complemented with job search-specific skills, relevant to local / national circumstances.

Another aspect of the transformation that is taking place is the evolution of service delivery towards online and, in some cases, digital-only delivery channels, driven by the need for more cost-effective solutions. Employment services are increasingly using computer-based, online, and mobile tools for skills assessment, enhancing access to careers information and guidance, providing better access to job offers, better matching of supply and demand and support for monitoring progress of e-job seekers.

In this context, a number of policy issues arise. First, there is a need to ensure that jobseekers have the necessary ICT access and skills to effectively use these new online employment services. Disadvantaged groups, who need the services most, may find themselves facing new, digital barriers to employment. Second, the

professionals working in some LMIs can lack adequate skills and support for effectively delivering online services and for tapping the as yet unexploited potential offered by ICT. And third, although good practices have been identified regarding ICT solutions for service delivery and more concretely for matching labour market demand and supply<sup>27</sup>, there is a lack of information on the state of the development, effectiveness and best practice across Europe of these solutions, and on their role in improving the quality and effectiveness of these types of services.

### **ICT supports Employers in recruitment and selection, and training**

Although scientific evidence on employers' practices in using ICTs for recruitment and selection is limited at the moment, there is enough to show that employers are increasingly turning to ICT-based solutions. There is some old but still relevant evidence of increasing usage by employers of ICT, like social networks, and of the high level of job postings on the web. For example, 45% of a surveyed sample of 2,667 managers and human resources staff in the USA used social networks to screen applicants in 2009. This proportion doubled in 2010 (and is likely to have increased further since) (Wortham,

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<sup>27</sup> See for example Porta22, Barcelona Activa (Spain), <http://w27.bcn.cat/porta22/en/>

2009). In 2006, already 8 years ago, large companies in Germany posted 86% of their vacancies on the web, only 27% posted them exclusively in printed media, and 2/3rds of all jobs filled had been posted online (Karla et al., 2008).

Major drivers for employers' use of ICT are cost reduction, convenience, ease of communications and flexibility. In addition, ICT brings employers wider geographical reach and a larger audience, 24/7 availability, reduction in time to hire, provision of more, richer and up-to-date information about the positions, automatic screening tools that allow employers to deal with larger volumes of applicants, access to proactive but also passive applicants (not searching for a job), in particular through social networks, and an improved corporate image, reputation and branding (Verhoeven/Williams, 2008; Barber, 2006; Aurelie/Fallery, 2008).

However, disadvantages are also associated with the use of e-recruitment and e-selection tools. The need to deal with a larger quantity and lower quality of applicants (due to rising "job flirting" facilitated by internet), the exclusion of candidates without sufficient ICT skills, the high costs and the need to have name recognition for small companies, authenticity issues in online tests and the loss of the personal touch have been reported among others (Verhoeven/Williams, 2008; Barber, 2006; Aurelie/Fallery, 2008).

The proposed definition of employability includes progression in work, and a key element of this is training and workforce development of employed people. ICT supports workforce learning and development through more flexible eLearning training resources. Finally, individual circumstances can also undermine the employability of many people, for example those who need to balance caring and work, and who can be at risk of not being able to work. 6% of employees and 10% of those aged 50-64 care for a relative of 15+ years, and need to find ways to combine work with their care duties (Kullen/Gareis, 2011). ICT has facilitated more flexible working to enable these employees to better combine both responsibilities.

Unfortunately, the study found that currently little is known of employers' roles in employability (through training, for example), their selection and recruitment practices and their level of tools, competences and resources to effectively recruit the most suitable employees.

## Conclusions

As regards the question of whether Information and Communication Technologies and the Internet have really changed employability, job search and selection and recruitment processes, the literature review has found sufficient evidence to show that ICTs strongly support individual factors of employability, including job search activity. However, while sufficient evidence exists to understand the potential of ICTs to support the role of labour market intermediaries in employability and enterprises' recruitment and selection practices, less is known about the extent to which ICT-based solutions have been adopted in Europe and their impact.

Though ICT skills and digital competence have become crucial for the employability of individuals, only 46% of unemployed people, according to Eurostat, used internet for job search in 2011. Thus, top priority should be given to actions which pursue digital inclusion and digital competence including job search skills, particularly for those who are more disadvantaged. Specific policy attention should be paid to ensuring that there is sufficient recognition of those actors who provide digital competence to learners and job seekers, such as formal and non-formal education organisations (including those from the third sector) and that they have the necessary skills to accomplish this task.

ICTs can also improve the cost-efficiency and effectiveness of the services offered by labour market

intermediaries, including the employment services, which are increasingly using these technologies to assess skills and to enhance access to career information and guidance. However, the research finds that these intermediaries still lack adequate skills and tools for the effective delivery of online services. This suggests that opportunities offered by ICT to intermediary actors, e.g. to match supply with demand, need to be further exploited to achieve their potential. Furthermore, the risk that online-only strategies will exclude the most vulnerable who are often digitally excluded, is beginning to emerge.

Solid evidence is also emerging that ICTs can effectively support recruitment and selection, workforce learning and more flexible working patterns - all of which are important factors that contribute to employability. However, given the scarcity of data about employers' recruitment and selection practices, particularly as regards their use of ICTs, further investigation into their practices and their level of tools, competences and resources for cost-effective recruitment is recommended.



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