Labour Market Information (LMI), Information Communications and Technologies (ICT) and Information, Advice and Guidance (IAG)

The way forward?

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Contents

Executive summary

- The increasing use of technology by key user groups of careers services – especially young people – is placing new demands both on individual careers practitioners and on the organisations for which they work. A key challenge for the immediate future is to ensure that the careers guidance sector is equipped to respond to these demands.

- There has been a consistency in various policy documents pointing to the importance of high quality careers guidance, with labour market information (LMI) at its centre, both for young people and for adults – and with an increased use of information and communication technologies (ICT) highlighted as an essential component for widening access to services to a broader population of clients.

- The policy framework that distinguished three activities of careers guidance (information, advice and guidance) designated information giving as the lowest cost component of service. This led to the erroneous perception that giving information as part of careers guidance is not only cheap, but quick and simple.

- It is important to distinguish between the different skill sets required by careers practitioners for providing their clients with direct, unmediated access to LMI and those required to provide clients with the support necessary for the interpretation of LMI for an individual's particular circumstances and career progression. Whilst many clients want direct access to information, once they have got this, they often need help making sense of it.

- The Sector Skills Councils (SSCs) are well positioned to collect and disseminate high quality, current and comprehensive sector-based LMI for careers guidance. However, there are certain limitations associated with the use of this source of LMI for careers guidance.

- Careers practitioners need and want different types of LMI for different purposes. As well as LMI for use with their clients, they need it for their own professional development. They are generally able to see the potential of ICT for their work in this area.

- With the introduction of a policy focus on social inclusion, the expertise of careers guidance practitioner around employers and the labour market became seriously eroded. This needs to be re-built.

- Given the unrestricted and direct access to information of all types, it is becoming increasingly important for practitioners not only to develop the skills, knowledge and understanding necessary to access, interpret and mediate personalised LMI for their clients, but also to support the learning of their clients in this area.

- Digital technology has resulted in a 'quiet revolution' over the past decade, in all aspects of our lives. Three purposes for the use of ICT in careers guidance have been identified: as a resource; for communication; and for material development. Whilst using ICT as a resource is highly developed in careers guidance, the other two purposes are under-developed.

- The generational distinction that has been made between digital natives and digital immigrants is important to the delivery of careers guidance services. Regarding services for young people, the clients are digital natives whilst the majority of practitioners are digital immigrants. In contrast, for services for adults, both the majority of clients and practitioners delivering services will be digital immigrants. This has profound implications for service delivery.

- The digital divide is also a factor in the delivery of careers services using internet based service. There is a real danger that disadvantaged individuals, with a particular need for careers guidance support, will be excluded if service delivery comes to depend on access to ICT before national policies address the twin issues of digital infrastructure and digital user skills.

- Other challenges to introducing integrated ICT careers guidance services exist, such as safety and privacy, intellectual property and the technological infrastructure within which services will be delivered.

- The skills and competences required for internet-based careers guidance need to be regarded as two separate, but inter-related domains. One relates to ICT user skills and competencies, whilst the other relates to more generic careers guidance skills and competencies. The careers guidance workforce has many of the same generic ICT skill development issues as the general adult population, whilst generic skills will need to be transferred selectively and adapted to different operational contexts.

- A developmental approach to training support is both crucial and urgent for careers services wishing to deliver a fully integrated service with an effective internet-based component. One other essential component of successful training will be a unifying practice framework within which ICT skills can be located.

- Other challenges to the introduction of integrated internet based careers service include the lack of technical infrastructure and support that is fit for purpose; the commitment of management at all levels; and the engagement and empowerment of some clients.

- Irrespective of cautionary notes that need to be sounded around this area of practice, interesting and innovative work has already been done and is also underway, which promises a bright future for careers services that wish to integrate ICT into services to clients.

1. Introduction

The most creative way of approaching ICT in careers education, information and guidance is as an agent of change, providing opportunities to redesign careers guidance services as a whole.

(Palomba, 2009, p.70)[1]

Technology has influenced, and will continue to influence, both the manner in which careers services are accessed by clients and the ways they are utilised. It also has the potential to enhance the impact of services[2]. Indeed, the increasing use of technology by key user groups of careers services – especially young people – is placing new demands both on individual careers practitioners and on the organisations for which they work. One key challenge for the immediate future is to ensure that the careers guidance sector is equipped to respond to these demands. Not only does it need to comprehend the potential of a fully integrated system of information and communication technologies (ICT) for increasing the quality and flexibility of services it offers, but it needs, urgently, to develop its workforce capability (managers as well as practitioners) together with its technical infrastructure (and policies). Some other challenges that will need to be addressed are beyond the scope of the careers guidance sector. These include safety and privacy issues for service users (especially young people); social equity issues relating to the digital divide; and the national technological infrastructure needed to support the delivery of internet based careers guidance services.

By way of introduction to a discussion of the opportunities and challenges that the rapid developments in ICT pose to the delivery of careers, or information, advice and guidance (IAG) services, this section will discuss, briefly, the broad policy context within which a leading edge 21st century universal IAG system, with an emphasis on up-to-date, high quality, industry based labour market information (LMI) would be positioned. Additionally, it will review the nature of careers (or IAG) as a public service and consider the role of internet-based guidance in both current and future service provision. It will also begin to examine the use of ICT in the delivery of careers services, highlighting some key issues in the provision of labour market information (LMI) as a crucial and pivotal aspect of high quality IAG.

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[1] Palomba, E. (2009). ICT for Counseling and Careers Guidance Services. In Research, Reflections and Innovations in Integrating ICT. In Education. Retrieved 19 March, 2010 from: http://docs.google.com/viewer?a=v&q=cache:resZ5ar RpP4J:www.formatex.org/micte2009/book/70-73.pdf+Palomba+ICT+for+counseling+and+careers+guidance+ services&hl=en&gl=uk&pid=bl&srcid=ADGEESj3llNmuIYkWvAPi2kiD7BLj0yAgIeCWbalCCB9MJtjtzO6d6A36TNx1-p- NBgKqCMsysZi7APxgW2PLruPK5hfgQ3GSpULv5bXlFy6sjJn_AwP8j_FFv8C9MYUp9niy8GkhZy6&sig=AHIEtbRy2Zk nfMKSGuKwSaHJD6EJQpg5jg
[2] Hughes, D., and Gration, G. (2009). Literature review of research on the impact of careers and guidance-related interventions. Reading: CfBT Education Trust. Retrieved 4 August 2009, from http://www.cfbt.com/ evidenceforeducation/pdf/Literature%20Review.pdf

1.1 Policy context

The White Paper 'Skills: Getting on in business, getting on at work'[3] complements and extends the earlier 'Skills White Paper 21st Century Skills: Realising our potential'[4]. In combination, these publications contain the strategy for raising the skill level of the labour force in the UK and ensuring the supply of skills in the labour force matches employer demand. Alongside a high priority given to the efficient functioning of the labour market, the importance of the personal fulfilment that can be derived from the skill development of individuals is highlighted, together with the key role for 'improved' information, advice and guidance (IAG) in supporting individuals to make more effective choices.

Subsequently, a review was commissioned to identify the UK's optimal skills mix for 2020. The ultimate objectives of this review were to maximise economic growth, productivity and social justice by setting an appropriate policy framework. The findings of this review confirmed those of the earlier Skills White Papers[5]. It emphasised the need for the UK to 'raise its game' by increasing the skill levels of its labour force, so that it can increase its economic competitiveness[6] (p.1). It also identified the importance of embedding a culture of learning and proposed that 'a new and sustained national campaign to raise career aspirations and awareness' would contribute to the achievement of the skills agenda (p.103), together with support to make informed choices (p.107). The importance of effective information, advice and guidance (IAG) to the up-skilling agenda for raising individual aspirations was stressed (p.106), with an equal importance emphasised for both young people and for adults – since 'too few young people at age 14 are making the link between careers guidance and their personal decisions' (p.107).

The implementation plan for the Leitch Review[7] began the task of delivering on the recommendations, acknowledging that there was still 'a mountain to climb' (p.6). One mechanism was to be a new adult careers service that would 'give every adult easy access to skills and careers advice that will help them find work and progress in their careers' (p.7). This service would 'ensure that everyone is able to access the help they need to take stock of where they are in achieving their goals and ambitions, and to get the support they need to advance themselves and achieve their full potential' (p.10).

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[3] Department for Education and Skills (2005) Skills: Getting On in Business; Getting On at Work. Cmd 6483-I, 6483-II, Cmd 6483-III. London: Department for Education and Skills. Retrieved June 4, 2005: http://www.dfes.gov.uk/publications/skillsgettingon/

[4] Department for Education and Skills, Department for Trade and Industry, HM Treasury and Department for Work and Pensions (2003) 21st Century Skills: Realising our Potential [Individuals, Employers, Nation]. Cm 5810. London: Department for Education and Skills. Retrieved May 30, 2007 from: http://www.dfes.gov.uk/skillsstrategy/uploads/documents/21st%20Century%20Skills.pdf

[5] DES (2005) Op cit; DES,, DTI, HM Treasury & DWP (2003) Op cit

[6] HM Treasury (2006) Leitch Review of Skills: Prosperity for All in the Global Economy – World Class Skills. Norwich: The Stationery Office. Retrieved January 18, 2008 from: http://www.hm-treasury.gov.uk/media/523/43/leitch_finalreport051206.pdf

[7] HM Government and Department for Innovation, Universities and Skills (2007) World Class Skills: Implementing the Leitch Review of Skills in England. Cmd 7181, Norwich: HMSO. Retrieved January 18, 2008 from: http://www.dius.gov.uk/publications/worldclassskills.pdf

The Skills Commission's inquiry (2008)[8] into Information, advice and guidance (IAG) for both adults and young people provided a number of recommendations, as well as urging Government to reconsider a policy that kept careers services for young people separate from adults. Amongst its recommendations was the need to exploit the potential of Web 2.0 technologies in the delivery of services, particularly in the use of labour market information (LMI). Specifically, recommendation two (p.24) highlights the need for greater use of the internet to access high quality, industry-based labour market information (LMI) for guidance, whilst recommendation nine (p.43) emphasises the need to maximise the use of the internet and telephone to ensure that all-age IAG services are genuinely universal and widely accessible by clients.

Despite the Skills Commission's request to the Government to develop its all age strategy into an all age service, subsequent policy documents indicate the intention to keep services for young people separate from those for adults. The 'blueprint' for the new Adult Advancement and Careers Service[9], for example, makes this clear:

> *The Government remains committed to an all-age strategy for careers guidance, covering services for young people and adults. These groups have different needs which demand different solutions.*

<div align="right">(BIS, 2010, p.21, para. 77)</div>

However, the same document highlights the centrality of the use of ICT in the delivery of the new service for adults:

> *Delivering information and advice using new technology is the most important way in which we will increase the reach of the service .... The internet will be the first point of contact for a large number of people, and both services will therefore need to meet today's highest standards for online capability.*

<div align="right">(BIS, 2010, p.5,. para. 22)</div>

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8 Skills Commission (2008) Inspiration and Aspiration: Realising our Potential in the 21st Century. London: Policy Connect. Retrieved April 16, 2008 from: http://www.edge.co.uk/docs/content/sc_iag_inquiry_final_report.pdf
9 BIS (2010). Fuelling potential: A blueprint for skills accounts and the adult advancement and careers service. Retrieved March 19, 2010 from: http://www.bis.gov.uk/assets/BISCore/corporate/docs/F/10-648-fuelling-potential.pdf

The importance of deploying internet-based methods for delivering IAG is also reflected in the strategy for young people's information, advice and guidance[10]:

> …young people today want and expect to secure IAG from a range of sources beyond formal careers advice. In particular, they want to access information on-line, and to make use of new interactive technologies: web-based information is now a key route for young people.

(DCSF, 2009, p.13)

This particular strategy document, like the blueprint for the new adult service, is emphatic about the crucial role that internet-based services will play in the future delivery of IAG: 'Our IAG offer for young people will exploit a range of digital technologies' (p.38). It goes on to explain how a coherent range of attractive and engaging methods of accessing services remotely will be made available, which meet the needs and expectations of young people. To ensure provision is, indeed, attractive and engaging to young people, end-user design[11] is emphasised as a key development principle for internet based services: '…most importantly, we need to respond to what young people say about the kind of IAG they want' (p.13).

There has been, therefore, a consistency in approach from Government departments in England, with various policy documents pointing to the importance of high quality IAG services, with LMI at its centre, both for young people and for adults – with an increased use of ICT highlighted as an essential component for widening access to services to a broader population of clients, so increasing impact. What exactly, then, is the nature of these IAG services?

1.2 What's in a name? Information, advice and guidance (IAG)

The use of language in this area of public service delivery can be confusing. Amongst practitioners it can also be a highly sensitive issue .Over the past decade or so in England, the term 'Information, advice and guidance' (IAG) has become an umbrella term for a range of activities previously encapsulated in the term 'careers guidance'. The origin of this term can be traced back to a policy framework that was published in England in 2003[12] that related to service delivery to adults. This document separated out three key activities of IAG, which were to be differentially funded, with information the cheapest component of the service and guidance the most costly.

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10 Department for Children Schools and Families (2009). Quality, Choice & Aspiration: A strategy for young people's information, advice and guidance. London: HM Government. Retrieved 26 October 2009, from http://publications.dcsf.gov.uk/eOrderingDownload/IAG-Report-v2.pdf

11 Where prospective service users are centrally involved in the design and development of systems and services.

12 Department for Education & Skills (2003). Information, advice and guidance for Adults. Towards a National Policy Framework: Discussion Document. Sheffield: DfES. Retrieved June 17, 2008 from: http://www.lifelonglearning.co.uk/iag/iagdd.pdf

The distinct activities were:

> **Information** *relates to the process of informing clients about issues relevant to their development. Such information usually needs some interpretation (i.e. information needs to be converted into intelligence).*
>
> **Advice** *is about helping clients to undertake that interpretation of information and select the most appropriate option.*
>
> **Guidance** *is helping clients to: understand their own needs relating to learning and work; set and review goals/objectives for learning and work; understand their barriers to learning and work; overcome barriers/obstacles to learning and work; and to produce learning and career action plans.*

(DES, 2003)

However, some parts of the sector delivering services to adults retained (at least initially) the use of the term 'careers guidance'[13]. The term IAG was also adopted more widely in England than in the other three home countries of the UK[14]. Its use spread, again through policy directives, to services to young people – causing fragmentation of the profession per se and precipitating a crisis in the occupational identity of many practitioners delivering services.

As already indicated, in policy terms, the distinction amongst these three key activities enabled the implementation of a differentiated funding model for the payment of IAG services for adults. Eligibility criteria were introduced at the same time, specifying which client groups were entitled to different levels of publicly funded services[15]. However, this framework proved to be somewhat problematic to implement in practice. Not only did many practitioners feel frustrated some clients they felt needed support were not eligible for some types of interventions, but it also proved difficult to draw clear boundaries around the different activities – since when working with a client, one often merges seamlessly into another as the assessment of client need progresses during the course of an intervention[16].

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[13] For example, in the higher education sector, the term 'careers guidance' has been retained, largely, in common usage.

[14] 'Careers Service Northern Ireland' and 'Careers Wales' have both retained an emphasis on careers in the names of services – compared with nextstep (service for adults) and Connexions (service for young people) in England.

[15] Clients with NVQ level 2 or above were not, for example, eligible for publicly funded guidance.

[16] Bimrose, J, Barnes, S.A., Hughes, D. & Orton, M. (2004). What is Effective Guidance? Evidence from Longitudinal Case Studies in England, Sheffield: Department for Education & Skills & Warwick: Institute for Employment Research. Retrieved March 30, 2010 from: http://www2.warwick.ac.uk/fac/soc/ier/publications/2004/egr2004.pdf

Indeed, England was unusual in the adoption of the term 'IAG'. A year following the publication of this policy framework for adult carers services, an international review of careers guidance undertaken by the OECD (2004)[17] noted how terms like information, advice and guidance, vocational guidance, vocational counselling, career counselling and career development were used to refer to a range of activities. In this review, the OECD promoted use of the term 'career guidance' (p.18) and defined this as:

> *Services intended to assist people of any age and at any point throughout their lives to make educational, training and occupational choices to manage their careers. Career guidance helps people to reflect on their ambitions, interests, qualifications and abilities. It helps them to understand the labour market and education systems, and to relate this to what they know about themselves. Comprehensive career guidance tries to teach people to plan and make decisions about work and learning. Career guidance makes information about the labour market and about educational opportunities more accessible by organising it, systematising it and making it available when and where people need it.*

(OECD, 2004, p.19)

Subsequently, the largest professional association for this area, the Institute of Career Guidance, adopted this definition of careers practice. It is interesting to note that there is currently a shift in the policy arena in the use of language for this area, back to the use of the term 'careers'[18].

The relevance, here, of the introduction of a differentiated funding model for IAG is the way in which information (often, this would be labour market information) was designated as the low-cost, cheapest component of the service. Probably as a consequence, it also came to be regarded as the simplest and easiest to deliver. This policy expedient challenged the well established, respected and quite contrary view that because information giving in the guidance intervention requires a high level skill, it consequently requires competent practitioners to deliver effectively[19].

These oppositional views on the way in which labour market information should be delivered in careers guidance have implications for the use of ICT in delivering information as part of the guidance process. Perhaps in addition they draw attention to the important distinction between careers services simply *providing clients with access to LMI* and providing clients with *appropriate careers guidance support in the interpretation of LMI* – for an individual's circumstances and progression. These issues will be discussed further below, in section 2.

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17 OECD (2004). Career Guidance and Public Policy: Bridging the Gap. Paris: OECD.

18 For example, the group recently convened by DCSF (first meeting 16th February, 2010, chaired by Dame Ruth Silver) to examine workforce development issues for the sector is called the 'Task Group for the Careers Profession'.

19 For example, see Egan, G (2001). The Skilled Helper: A Problem-Management and Opportunity-Development Approach to Helping. Wadsworth Publishing.

1.3 Careers guidance services delivered using ICT

The potential of using ICT to deliver careers guidance service has long been recognised by the broad community of careers guidance practice. An examination of the literature provides evidence of this, but also reveals an inconsistency in the use of terminology used to describe the application of technologies for the delivery of services[20]. For example, Evangelista (2003)[21] refers generically to the 'use of the internet' in careers guidance (p.1), whilst the term 'e-guidance' is used by Offer (2004)[22] to describe 'a means of giving more guidance to more people, more often, at a distance' (p.1). Barnes (2008)[23] writes broadly about 'the use of ICT in delivering career guidance' (p.1), with a European guidance report on the ethics of this area of practice using two terms, 'web-based guidance' and 'internet guidance', interchangeably (Ariadne, 2004)[24].

The types of internet-based services (or delivery methods) listed under these overall terms also vary. For example, Offer (2004)[25] included four methods of delivering 'e-guidance': web chat, email, on-line discussion forum or message board, text messaging from, and to, mobile phones (p.1). Subsequently, eight internet based tools were identified by Watts and Offer (2006)[26] and Barnes, La Gro and Watts (2010)[27]: email, chat, newsgroup, website, SMS (text messaging), telephone, software (i.e. CD-ROM and free-standing computer programs) and video-conferencing.

This progressive expansion of the methods identified for the delivery of internet based guidance provides a clear indication of the speed at which technology is advancing. It also belies the relationships that have developed amongst theory, policy and practice. An example relates to the use of the telephone. The use of the telephone in service delivery for careers guidance was initially regarded as quite separate from face to face services. Telephone guidance began to be delivered in a serious way about a decade ago by a workforce that was recruited for its call-centre expertise (in preference to their knowledge of guidance), from call centre premises[28].

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[20] Bimrose, J., Barnes, S-A and Attwell, G. (in press). An investigation into the skills and competencies needed by Connexions Personal Advisers to deliver internet-based guidance.

[21] Evangelista, L. (2003). How is the internet changing careers guidance? First results of a survey amongst European Careers Advisers. Retrieved 3 August 2009, from http://www.guidanceforum.net/pages/res_general/surveyresults.pdf

[22] Offer, M., Sampson, J.P. and Watts, A.G. (2001). Careers services: Technology and the Future. Manchester: Higher Education Careers Service Unit.

[23] Barnes, A. (2008). Workforce development and the use of ICT in Delivering Career Guidance in the UK. Cambridge: NICEC. Retrieved 4 December, 2009 from: http://www.crac.org.uk/crac_new/pdfs/ICTSkills2_Report.pdf

[24] Ariadne (2004). Guidelines for web-based guidance. Bucharest: Afir Publishing. Retrieved 4 August 2009, from http://www.ariadneproject.org/index.php?id=56

[25] Offer, M. (2004). What is e-guidance? Using information and communications technology effectively in guidance services. Manchester: Graduate Prospects and HECSU. Retrieved 3 August 2009, from http://www.prospects.ac.uk/downloads/csdesk/eguidance/what_is_e-guidance.pdf

[26] Watts, A.G. and Offer, M. (2006). IAG Review: The current and potential role of ICT in delivering Information, Advice and Guidance. Derby: Centre for Guidance Studies, University of Derby. Retrieved 3 August 2009, from http://www.iagreview.org.uk/papers/Defining%20IAG.pdf

[27] Barnes, A., La Gro, N. and Watts, A.G. (2010). Developing e-guidance competences: the outcomes of a two-year European project to transform the professional development of career guidance practitioner. 25, Spring. Cambridge: Career Research and Development.

[28] With the introduction of the 'learndirect' telephone helpline.

This separation has continued up to the present. However, with the speed of technological advancement and the merging of functionalities, it is no longer helpful to continue to regard telephone services as a separate mode of delivery. Young people now use a number of digital devices, and different modes of communication, at the same time – a mobile phone, a television, a laptop – to build very complex and deep interconnections with one another and internet locations[29]. Yet the blueprint for the new Adult Advancement Careers Service (AACS) has retained this separation in the planned service provision[30]. It states how:

> *The adult advancement and careers service will provide a core offer of labour-market focused careers and skills information and advice accessed face-to-face, by telephone, or online (with access to information and advice through email, web forums and text messaging).*

<div align="right">(BIS, 2010, p.7, para 26)</div>

With the description of the 'online' services that are to be offered by the AACS excluding the use of the telephone:

> *....a wide range of online information and advice including access to advisers via email, web chat and forum facilities; text, video and audio information on careers and jobs; and the latest news and articles on relevant work and skills issues;...*

<div align="right">(BIS, 2010, p.9. para 29)</div>

In addition to the separation of telephone guidance from online services, a puzzling inconsistency is contained in the blueprint regarding workforce development. Whilst there is no mention of the need for the practitioners who will deliver face to face and online services to develop the skills to deliver telephone guidance, the importance of practitioners acquiring ICT skills who are working in the two delivery channels other than online (that is, telephone and face to face) is stressed:

> *But advisers in the telephone and face to face channels of the adult advancement and careers service will also need to use new technology: both to enhance the customer experience, for example by accessing online sources of labour market information in real time; and to open ups access to those who would not normally use careers advice services...*

<div align="right">(BIS, 2010, p.5, para. 22)</div>

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[29] YouthNet (2009). Life Support: Young People's needs in a digital age. Retrieved 19 March 2010 from: http://www.youthnet.org/content/1/c6/06/00/50/Life%20Support%20-%20Young%20people's%20needs%20in%20a%20digital%20age.pdf

[30] BIS (2009). Op cit.

In terms of developing an understanding in the careers guidance workforce of the potential benefits of a service offer to clients using a fully integrated ICT system, this may represent something of a difficulty.

Alongside realising the full potential of integrated internet-based services, there come considerable challenges – some of which are largely beyond the scope of careers guidance providers to address. One relates to the privacy and safety of clients, who may find the option of going on-line for careers guidance (as opposed to information) attractive. A second relates to the challenges that the unrestricted access to specialist information by clients poses for the 'expert' role of the careers practitioner. The third relates to intellectual property of materials that may be produced through collaboration across organisational boundaries on-line. All these will be picked up below, in section 3.

Perhaps an even more fundamental challenge relates to the competency of practitioners and their managers to deliver internet-based guidance services, together with the organisational 'readiness' essential for the successful implementation of a comprehensive, integrated system of internet based careers guidance services. These issues will be discussed more fully in section 4, below.

Whilst the potential impact of integrated ICT services on careers guidance provision is significant, so are the challenges it brings with it. At the heart of high quality services is high quality, industry-based labour market information. What, then, are the particular issues related to the provision of LMI in the careers guidance process, through the use of ICT and what are client expectations?

1.4 Labour market information (LMI) for IAG

Most people wanting guidance ultimately need help preparing for and/or finding paid employment. Not unreasonably, they assume that the careers guidance practitioner to whom they turn for help will be an expert in labour market information (LMI). Indeed, it has been argued that this type of information is central to effective guidance: 'What makes guidance distinctive is the application of, and reference to, expert knowledge and understanding of the labour market and its functioning' (Offer, 2001, p.76)[31]. However, it is not just the expert knowledge and information that makes guidance distinctive. It is the objectivity of the information in which they deal and their impartiality that careers guidance workers often emphasise as unique.

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[31] Offer, M. (2001) The Discourse of the Labour Market, in Gothard, B., Mignot, P., Offer, M., Ruff, M. (Eds) Careers Guidance in Context, London: Sage.

However, the role of LMI in the guidance process is a contested area. In the 'matching' approach to guidance[32], for example, it is assumed that giving high quality information is an important feature of effective guidance because its provision will stimulate behaviour change in the client (e.g. provision of information about selection procedures for a particular job or course will result in the client ensuring that s/he meets any deadline). This 'matching' approach (which is the longest established and probably the best known) assumes a rational model of human nature, where logic is systematically pursued and individuals are motivated to plan ahead, develop and accrue their human capital. In their career transition behaviours, this approach has confidence that all clients have the ability (and preference) for engaging in behaviour that will maximise the benefits (mainly economic) to themselves.

This (dominant) approach to careers guidance has, however, increasingly attracted criticism[33]. Not all clients are rational, nor are they all able (or willing) to plan ahead. If such criticisms are accepted, then different approaches to careers guidance practice are strongly indicated. Alternative, evidence-based frameworks for practice suggest ways of using information in the careers guidance process differently. For example, one suggests that careers guidance should empower clients to undertake their own research into career options, rather than providing information as part of the careers guidance intervention[34]. One other suggests that, since careers guidance is essentially a learning process, information should be provided in a form that enables the client to interact with it as part of a learning process[35].

Whilst it is generally agreed, therefore, that LMI plays an important role in the careers guidance process, views about the ways it can be used in practice are varied, with different outcomes following for clients. For example, in a 'matching' approach, information would be given to the client during the careers interview. In contrast, a humanistic, client centred approach would strive to develop in the client the skills and knowledge they would need to become self-sufficient in information searches.

There are also different skill sets required by practitioners delivering services for providing clients with *direct access to LMI*, compared with *providing LMI as part of a high quality careers guidance intervention*. Whilst many clients want direct access to information, once they have got this, they often need help making sense of it for their own situation. The next section considers the nature of LMI in more detail, explores sources of LMI and the vexed question of impartiality of LMI in the careers guidance process. It finishes by looking at the evidence on what types of LMI practitioners prefer and the ways in which they would prefer to have it delivered for use in practice.

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[32] A matching approach to guidance requires an assessment of an individual's skills, abilities and attainments so that the best match can be made with an appropriate job or training/education course.
[33] Skills Commission (2008) Op cite.
[34] The humanistic, client centred approach to helping.
[35] The social learning theory of career decision making.

2. Labour market information (LMI) for IAG

The focus of this section is on the provision of LMI for high quality IAG services. With unlimited access, through ICT, to innumerable sources of information, how do careers and their clients navigate this increasingly complex terrain? What is the LMI required in the careers guidance process? From what sources can this LMI be accessed? What are the particular issues when trying to ensure that high quality, labour market focused, impartial careers guidance is delivered to clients? What type of LMI do careers practitioners say they want? How does the easy access to unlimited LMI re-define the role of the careers practitioner as the 'expert'?

The gap between the aspiration of the provision of high quality, impartial, industry-based LMI as part of the careers guidance intervention and the reality will be reviewed in this section, together with a discussion of some of the barriers to realising this goal[36].

2.1 Labour market information (LMI) for IAG

As part of the strategy to inspire individuals to advance themselves in the labour market, the importance of high quality LMI for effective careers guidance (or IAG) has been highlighted in various policy documents on education, training. The final report on the Skills Commission's inquiry into IAG, for example, states that:

> *Individuals need high quality information on labour market opportunities in order to make informed choices*

> (Skills Commission, 2008, p.36)[37]

A narrow definition of a labour market refers to where employers (the demand side) and potential sellers (the supply side) exchange labour, with accurate, up-to-date information being crucial to its smooth operation. The term 'labour market information' (LMI) is not, however, confined to information on the supply and demand of labour. It is now more generally used to include any information that relates to the operation of markets for learning, skills, employment, labour and their relationship to the wider economy[38]. Hence, the recommendations for the careers information services core offer by Sector Skills Councils (Luddy, 2007: 16-17)[39] defined LMI as: 'data about how the labour market is operating', making reference to government legislation and supporting policies, inter-relationships between labour markets at different geographical levels (e.g. through migration flows) and wider social, economic and technological change as issues affecting the operation of labour markets.

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36 This section draws upon material contained in the document: Bimrose, J. (2008) 'Protocols for the development of LMI produced for the guidance process by the SSCs' that was commissioned by DIUS, but is not available in the public domain.

37 Skills Commission (2008) Inspiration and Aspiration: Realising our Potential in the 21st Century. London: Policy Connect. Retrieved March 10, 2010 from: http://www.policyconnect.org.uk/fckimages/Inspriration%20and%20 Aspiration.pdf

38 Learning and Skills Council, North Yorkshire (2002) Guide to labour market information and Intelligence. Version 1. Aspire & Transform Ltd.: Sheffield.

39 Luddy, D. (2007) SSC IAG project 2007/08: Recommendations for the careers information services core offer by Sector Skills Councils. Prepared for Skillset and the Skills for Business network.

Although the following list is by no means exhaustive, LMI for careers guidance, or IAG, includes:

■ information on general employment trends (e.g. historical trends, future demand);

■ data on the structure of the labour market (i.e. what jobs exist, how many, which sectors, which occupations);

■ information about the way the labour market functions (i.e. how people get into jobs and move between employers, etc.);

■ the interaction between labour demand and supply (i.e. mismatches – as reflected in unemployment rates, skills gaps, skills shortages, etc.);

■ data on national, regional and local labour markets variations (i.e. size of workforce, prominent sectors etc.);

■ data focusing on equality and diversity (i.e. which individuals are employed in different sectors and at what levels?); and

■ information on progression routes (i.e. career structure, earnings, transferability of skills).

In the context of LMI for strategic planning, for policy formulation and for information, advice and guidance (IAG), the distinction has been made between labour market *information* and labour market *intelligence*. In essence, labour market information refers to quantitative or qualitative data found in original information sources (typically available from surveys and reported in tables, spreadsheets, charts, etc.), while labour market intelligence relates to the interpretation of labour market information, referring to subsets of information that have been subjected to further analysis[40]. Consistent with this distinction, Luddy (2007: 17)[41] refers to labour market intelligence as being 'generated by the systematic collection and analysis of different sources of labour market information'.

In a careers guidance context, one further relevant distinction has been made between LMI for careers guidance that is non-interactive compared with interactive[42]. Here, non-interactive LMI is generally linear in nature, is paper-based, often broader in range and more detailed in topic coverage. Interactive LMI (using ICT) is generally non-linear, with the user maintaining some control over the selection and sequencing of information.

[40] LSC and DfES (2004) LMI Matters! Understanding Labour market information, Nottingham: DfES.
[41] Luddy, D. (2007) op. cit.
[42] Sampson, J.P. Jr., Reardon, R.C., Peterson, G.W. and Lenz, J.G. (2004) Career Counseling & Services: A cognitive information processing approach. Belmont, CA: Thompson Brooks/Cole.

Other distinctions also exist between 'hard' and 'soft' data, 'official' and 'non-official' sources, etc. The distinction between non-interactive and interactive is particularly important when considering the role of ICT in the provision of LMI for careers guidance, or IAG. Though what are the sources from which these different types of data can be drawn?

2.2 Sources of LMI for IAG

Whilst much high quality LMI already exists, there is scope for some refinement and enhancement of the LMI used in careers guidance, or IAG. Indeed, some policy documents have been critical of the quality of available LMI for this purpose[43]. However, it is important to draw a distinction between:

■ deficiencies in the use of LMI that is available; and

■ objective shortcomings in the LMI that is available – perhaps due to small sample sizes, methodological issues relating to particular data sources, etc.

Using the broader definition of LMI discussed above, in section 2.1, it is clear that it is available from a diverse range of sources. Of course, the Sector Skills Councils (SSCs) are well positioned to collect and disseminate high quality, current and comprehensive sector-based LMI for careers guidance. Indeed, it seems to be the case that most SSCs see themselves as the most appropriate source of this data. However, there are limitations with a dependence on SSCs as the exclusive source of data for careers guidance. This is partly because they are at different stages of development (because of the historical way they were phased in) and partly because of different resource bases with related capacities associated with these resource bases. Moreover, the amount and availability of robust LMI varies, to some extent, because of the footprint of SSCs. So some:

■ have larger employment bases than others;

■ are less easily replicable in terms of the Standard Industrial Classification (SIC) than others, with the use of Standard Occupational Classifications (SOC) as an alternative;

■ are unable to estimate employment bases, as there is a delay in national statistics collecting data on new (evolving) occupations; and

■ are more reliant on atypical labour (e.g. freelancers, volunteers, etc) than others.

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43 See, for example:
Foster, A. (2005) Realising the Potential: a review of the future role of further education colleges, DfES/LSC. Retrieved January 18, 2008 from: http://www.dcsf.gov.uk/furthereducation/uploads/documents/REALISING06.pdf
Leitch, S. (2005) Skills in the UK: the long-term challenge, London: HM Treasury. Retrieved January 18, 2008 from: http://www.hm-treasury.gov.uk/independent_reviews/leitch_review/review_leitch_index.cfm

One other serious limitation of the LMI produced by SSCs for careers/IAG is that it does not supports clients in considering the issues related to moving between and amongst different sectors. This could be regarded as a major shortcoming, given the increasing flexibility of the labour force between sectors, as well as within.

Notwithstanding these limitations, the LMI produced by SSCs for use in the careers guidance process should meet certain quality criteria, including:

- adherence to the core ethos of equality of opportunity for all and compliance with related legislation;

- accessibility to potential users, addressing physical limitations as well as the ability to understand particular levels of complexity;

- reliability, comprehensiveness and currency;

- relevance to the needs of careers practitioners in their careers guidance work with clients; and

- impartiality, so that it does not promote one sector, in a competitive manner, as superior to any other, or mask an economic decline.

All of these criteria are important, but it is the problematic issue of impartiality that is considered next.

2.3 Impartiality

Facts do not speak for themselves. The same information (e.g. LMI) can be used to support different versions of events. For example, data on the numbers of girls and women attracted into careers in science or technology over a five year period could be used to:

a)   illustrate how educational and marketing campaigns have achieved a degree of success, because the numbers of girls and women being attracted to this sector are greater than, say, fifteen years ago; or

b)   criticise careers guidance practitioners for being biased in their practice, because insufficient numbers of girls and women are being encouraged to enter this particular occupational sector.

In other words, facts partly *determine* and partly *constrain* the interpretation that can be placed on events. The use of LMI as part of the careers guidance process raises some interesting questions. LMI is collected by various stakeholders for particular purposes. For example, the Higher Education Statistics Agency (HESA) is the official agency for the collection, analysis and dissemination of quantitative information about higher education that aims to provide information

on the characteristics of UK higher education students, leavers, staff, and institutions. Because of this, use of its LMI data in the careers guidance process will, at some stage, inevitably involve a degree of selection and/or interpretation on the part of the user – in this case the careers practitioner. Does this process of selection, therefore, risk compromising the impartiality of the careers guidance process?

Codes of practice espoused and promoted by various professional careers guidance associations (e.g. the Institute of Career Guidance, the International Association of Educational and Vocational Guidance) place impartiality at the very centre of ethical practice. To become members of these associations, practitioners must 'sign up' to these codes of practice. Not surprisingly, therefore, impartiality is a key value for many (probably most) careers guidance practitioners and an important aspect of their professional identity. They will generally argue that impartiality is critical to the delivery of 'objective' careers guidance and will defend, fiercely, their obligation to operate impartially. Paradoxically, however, as soon as a careers practitioner starts to explore the implications of a client's careers decision, s/he will start to make a set of professional judgements. Difficult judgements sometimes have to be made.

For example, 'protective channelling' (Cross *et al*., 1990[44]) or 'anticipatory discrimination' (Cross, 1987 in Chatrick, 1997[45]) occurs where the careers guidance practitioner may try to shelter a client from occupational experiences, either in a job or work experience placement, that they anticipate (often on the basis of robust evidence) will be discriminatory and negative. Whilst this could be regarded as ethical practice – since practitioners are acting in what they consider to be the best interests of their clients by trying to prevent them coming to harm – it could also be argued that it is not being impartial.

Quite separate from ethical judgements that will be made routinely about the LMI used by a practitioner with a client[46], LMI itself can be partial or biased. An example of partial LMI would be where a training provider produced information for the purpose of promoting particular courses that were either slow to recruit or perhaps represented a new offer. In this circumstance, LMI is likely to be produced to address a particular organisational need – that of attracting individuals to ensure the financial viability of the training offer. Because of this, it is likely to be biased, since it will promote the virtue of a particular course offered by one institute over a competitor organisation. Another example of LMI that is not impartial relates to the representation of statistical information. For instance, one Sector Skills Council, where employees are predominantly male, stated that 'there is a strong gender bias, with high concentrations of female workers in administrative and secretarial, sales and customer service roles'.

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[44] Cross, M., Wrench, J., & Barnett, S., (1990) Ethnic Minorities and the Careers Service, An investigation into Processes of Assessment and Placement, Coventry: Centre for Research in Ethnic Relations.

[45] Chatric, B., (1997) New Deal – Fair Deal? Black young people in the labour market, Essex: Barnardo's, The Children's Society and Youthaid.

[46] An example would be where a practitioner expresses a reluctance to make LMI data on the workforce profile of a particular occupational sector directly available to a client, because this might be too discouraging for those groups employed in a minority

At best, this presentational style gives a somewhat misleading impression (some might argue biased) to the naive reader of the current gender balance across the sector[47].

However, whilst impartiality is a principle to which careers practitioners aspire, a study of guidance provision for adults[48] found that in reality, it is often compromised by factors like the culture of the organisation delivering services; inadequately trained IAG staff; or simply by the lack of access to high quality, impartial LMI. Achieving a level of impartiality that ensures the delivery of objective careers guidance therefore presents a number of challenges in the use of LMI in careers guidance.

So what, then, do careers practitioners say they want in LMI – that might make it made attractive to them for use in their practice?

2.4 LMI required by careers practitioners

In any discussion about the nature of LMI required to support the delivery of high quality careers guidance, the practitioner perspective on what is required from LMI for the careers guidance process needs to be noted. Practitioners often know what they need for their work with clients and will resist using LMI that they do not perceive to be relevant, or adequate, for their work. Research evidence provides a clear indication of the types of LMI those giving careers guidance say they need. One small-scale survey of experienced advisers revealed different six types of LMI that were required (Offer, 2001, p.78)[49]: These were data relating to:

■ the demand for labour (how easy is it to get a job in this occupation, industry, role?);

■ progression routes, career structure and earnings (what are the prospects?);

■ geographical availability (how available is this in my travel-to-work area?);

■ overall trends (is employment on the increase in this occupation or industry?);

■ transferability (will I be able to transfer the competences and skills developed in this industry, should job opportunities decrease?);

■ recruitment and selection methods (where and how do people get jobs in this industry?).

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47 Example taken from a summary document of LMI for careers guidance submitted by a SSC (2010).
48 Connelly, G., Milburn, T., Thomson, S. and Edwards, R. (1996) *Impartiality in Guidance Provision for Adults: A Scottish Study*. Glasgow: The University of Strathclyde & Milton Keynes: The Open University.
49 Offer, M. (2001) Op cite.

It has been argued that currently available LMI is too heavily weighted towards early career choices Hirsch, *et al*. (1998)[50]. Data from 57 IAG practitioners and managers collected from focus groups as part of an ADAPT/ESF project[51] supports this view. The research explored the LMI that practitioners most wanted for their careers work with adults. Findings indicated that practitioners attached most importance to LMI that:

- was relevant for employed adults (that is, on transitions within the labour market that extend beyond the first into employment);

- relates to new job titles, skills levels and transferability of skills;

- has an equal opportunities dimension;

- includes current salary levels (for example, on entry, after five years, etc.);

- relates to trends in employment within and between sectors;

- gives an indication of changing skill requirements and skill mismatches in different sectors; and

- includes local LMI, including job vacancy information.

Further research undertaken on behalf of one particular Sector Skills Council explored the views both of sector specialists who delivered careers guidance on behalf of the SSCs, together with Ufi learndirect[52] advisers who, at that time, had special responsibility for clients interested in finding out more about this particular SSC[53]. This investigation identified what these groups of practitioners considered to be the most useful and the least useful LMI for the IAG process. Additionally, it detailed the preferred format of LMI by these practitioners and their key priorities in the provision of LMI. These were as follows:

The most useful LMI:

- identification of skills shortages;

- LMI relating to new entrants (like conditions for new entrants and new entrant schemes);

- regional labour market information; and

- local labour market information (including up-to-date vacancies).

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[50] Hirsch, W., Kidd, J.M. and Watts, A.G. (1998) Constructs of work used in career guidance. Cambridge: DEE/NICEC.
[51] Brown, A., Bimrose, J. and Hughes, D. (2005) 'Bringing Guidance Research and Practice closer together: the UK National Guidance Research Forum Website', International Journal for Educational and Vocational Guidance, 5, pp. 229-240.
[52] Subsequently re-named the Careers Advice Service (CAS).
[53] Bimrose, J. and Orton, M. (2005) Labour market information (LMI) for effective guidance within Skillset. Coventry: Warwick Institute for Employment Research.

The least useful LMI:

- statistical information (i.e. raw statistics without any interpretation);

- LMI that is 'out-of-date';

- information on employees who have been in an industry for a number of years (because enquiries for information are mainly from new entrants); and

- information on the training needs of sectors (rather than training routes for individuals).

From the limited amount of research that has been undertaken in this area, some clear and consistent messages about the types of LMI that careers practitioners consider most useful and desirable, have emerged.

They identify local LMI as their highest priority. They are frustrated when this does not exist and of course it generally does not exist because of the resource implications of collecting and maintaining it in a form that is current, up-to-date and easily accessible. Beyond local LMI, practitioners working with different client groups indicate slightly different priorities. For example, those working with young people value LMI related to initial entrants as a priority; those working with adults are more interested in progression routes and opportunities for mid-career change; and those working in higher education are interested in graduate entry level occupations. With a policy in England that seems set to maintain a separation between services for adults and young people, at least in the short term, it may be necessary to consider the provision of customised types of LMI for different regions and for different age groups. For example, on-going work with careers practitioners in a Connexions company in the South East region of England over a period of three years has resulted in the production of customised LMI sheets presenting local and regional data. This information is available in both hard copy and on-line and has been highly acclaimed by the practitioner community.

Practitioners also stress the importance of LMI being accessible in succinct summaries (to avoid their having to spend considerable amounts of time searching for it) and clearly presented (i.e. well laid out; distinguishing between general background and specific information). As well as being clear about the type of LMI required for careers guidance, practitioners provide a clear steer on the varied formats and through different media it is required. This includes using ICT as a medium, but also indicates paper-based LMI. LMI that is easily accessible through the internet is generally indicated by careers practitioners to be highly desirable to support their practice, but with a number of important caveats. These include:

- some clients simply do not have internet access;

- some organisational settings in which IAG is delivered prohibit internet access (e.g. prisons) and in others, internet access is not reliably available (e.g. outreach locations); and

■ downloading information can be difficulty, time consuming, and costly.

■ Overall, it is important to appreciate that the LMI needs of careers practitioners are complex and fluid. They require LMI for not only for a wide range client groups, but also for different purposes. For example:

■ LMI to which practitioners might give clients students direct access (e.g. Y9 students might be given LMI relevant to subject choice, like entry requirements to particular occupational sectors);

■ LMI informing their IAG practice generally (e.g. employment trends predicted in the regions in which they work); and

■ LMI which is interpreted by the practitioner for the client (e.g. what a student would need to do to enhance their chances of successful entry into a highly competitive occupational area).

2.5 LMI, IAG and ICT: the role of the expert?

As part of the policy focus on social inclusion and NEETs (young people Not in Education, Employment or Training) during the latter part of the 20th century, particularly in England, the professional work that careers practitioners had routinely undertaken with employers more-or-less ceased. Work with employers was also removed as a substantial component both from off the job training courses (Post Graduate Diplomas awarded by Universities) and from work-based training (NVQs in Guidance). This had consequences in terms of the expertise developed through strong networks that practitioners typically were able to build with local employers. It also eroded the knowledge base (and confidence) of practitioners around local labour market information. This expertise needs to be re-built.

In addition to the changes in the expertise of practitioners related to the labour market that were brought about through policy are the changes that have occurred with the increased access to information via the internet. The volume of LMI that is now available from innumerable internet sources is undoubtedly an unprecedented and invaluable resource for those making careers transitions. With increasingly sophisticated search engines, clients (especially younger clients) are able to develop their own search strategies for the LMI they need (Bimrose *et al*., in press). There is, however, a serious danger of overload – both for the careers practitioners and their clients. Additionally, making the correct judgements about the websites and the data most likely to provide reliable and relevant LMI is becoming more problematic. Yet another dimension is making sense of the data. A typical careers guidance query, for example, might relate to a particular training or education course. If a client applied to this course, at this particular institution, would they be able to secure employment in a particular occupational role and in a particular region of the country at the end of the course (potentially up to five years in the future)? Responding to this 'typical' query requires a high level of skill in accessing and merging different data sets, as well as a sound grasp of the weaknesses of computer modelling and statistical predictions.

This is before the resulting LMI is mediated – in a way that ensures that the client grasps the issues and uncertainties inherent in the 'response' to this type of question.

This fictious scenario illustrates the difference between *giving clients direct access to LMI* about employment destinations of students successfully completing the course in question (if it exists); and data on employment trends in the area for a particular job (if it exists), *compared with working with a clients in a careers guidance intervention* (whether face to face or using internet-based methods), in a way that helps the client understand how to access relevant data and interpret its meaning for their own personal, economic circumstances (see section 1.2, above).

Given the unrestricted and direct access to information of all types, including LMI, that the internet already provides, there is likely to be a gradual, but unstoppable, shift in the nature of the expertise that will make the careers guidance practitioner a distinctive and valuable professional for individuals in labour market transition. Whilst traditional notions of expertise are still in use, these now operate alongside more celebrity-based ideas of the professional[54]. In their use of LMI, careers practitioners will, therefore, need to become sophisticated in their research and interpretation of data from varied sources. Not only is it becoming increasingly important for practitioners to develop the skills, knowledge and understanding to access, interpret and mediate LMI for their clients, but it is also important for them to support the learning of their clients in this area.

> *Whilst there are many sources of information available on the internet, signposting to key locations to enable credible, accurate, trustworthy and fast access remains an issue. Young people want to search for information but they need support to assist them in the process of doing this.*

> (YouthNet, 2009, p.6)

In other words, careers practitioners need to be able to help clients to develop some of the same skills that they need to develop for themselves to use LMI effectively. Instead, therefore, of careers practitioners providing clients with urls to search directly for specific information, one priority indicated for their own professional development and work with clients is to work more with clients, supporting them to develop the ability to make appropriate selections amongst the bewildering range of sources.

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[54] YouthNet, 2009, p.45. Op cit.

ICT now also represents potential opportunities to develop bespoke LMI for clients, through a range of media. Technology exists to support collaborative processes amongst practitioners (between locations and perhaps even across organisational boundaries), where they can pool their expertise, build upon this, and customise version of LMI for particular clients. This remains untapped potential for careers guidance practice to develop – with great promise for enhancing the quality of services to individual clients. Additionally, we know that for young people, the advice process should involve participation and some element of self-discovery. Discussion, often anonymously with peers, is not only a source of advice, but indicates the credibility of the site. A brief discussion of ongoing innovative research and development (a European funded 'MATURE' project) exploring this area of careers guidance practice with the use of ICT can be found in section 5, below.

The next section considers the rapidly changing operational context in which organisations are delivering careers services.

3. The digital landscape

The digital landscape has been transformed over the last decade. Businesses, public services, individuals and families all use computers; digital facilities have shaped the way our economy is run and the way we live our lives. Our young people have grown up as digital natives and millions of adults have now joined them.

> It is a story of technological advance and rapid change; of government investment and private-sector partnerships. We all know that the pace of change will not slow down.
>
> (Business Innovation & Skills (BIS), 2009, p.8[55])

The impact of rapid ICT development on careers services will be discussed here. What potential does new technology offer for careers guidance? From where is demand for flexible, ICT driven delivery originating? Is this consistent across all client groups? Can service delivery match client expectation?

3.1 Web 2.0: potential, implications and challenges for careers guidance

Digital technology has resulted in a 'quiet revolution' over the past decade, in our lives at work, at home and at leisure (DCMS & BERR, 2009, p.3[56]). At the heart of current developments in technology is Web 2.0. This has changed the way people interact and has profound implications, potentially, for the delivery of careers guidance. It has, however, barely begun to impact on the way careers services are currently delivered.

Web 2.0 technology offers various functionalities, including the ability to aggregate user data, track and filter content, collaborate, 'mash-up' data or construct a social network. The development of these technologies has been characterised by six key features[57] that illustrate the shift that has occurred from building a global information space (Web 1.0) to creating functionalities with more of a social facility:

1. *individual production and user-generated content*, reflecting an exposure culture, where getting noticed has become an important goal.

2. *harnessing the power of the crowd*, where anybody can contribute their knowledge or experience to the solving of a problem or development of a resource.

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55 Department for Business, Innovation and Skills (2009). Independent Review of ICT User Skills. Retrieved 12 December, 2009 from http://www.dius.gov.uk/~/media/publications/I/ict_user_skills

56 Department for Culture, Media and Sport and Department for Business, Enterprise and Regulatory Reform (2009). Digital Britain: The Interim Report. Cm 7548. TSO: Norwich.

57 Anderson, P. (2007). What is Web 2.0? Ideas, technologies and implications for education. JISC Technology and Standards Watch. Retrieved 8 December, 2009 from http://www.jisc.ac.uk/media/documents/techwatch/tsw0701b.pdf

3.   *data on an epic scale*, with the development of powerful search engines that provide access to vast information resources.

4.   *architecture of participation*, with services self-improving through normal use of an application.

5.   *network effects*, related to the sheer scale of interactions that the net facilitates.

6.   *openness*, within the boundaries of the control, access and rights of digital content.

(Anderson, 2007)

The potential impact of new technologies on careers guidance services is therefore significant, as are the challenges that come in its wake. In the delivery of a publicly funded service, like careers, the cost benefits it may offer in a period of financial constraint are likely to be irresistible[58]:

> *...the digital society can offer more efficient public service delivery. This will be crucial in an era of very tight constraints on public spending in the years to come...*

(DCMS & BERR, 2009, p.6)

So whilst the technology now exists and the socio-economic political context is conducive to the introduction of integrated ICT services, what do the individual recipients of careers services require of these technologies and what might be some impediments to its introduction?

3.2 Integrating ICT into careers guidance services: push and pull factors?

The concept of the 'digital native' is attributed to Prensky (2001)[59], who discussed how the students of today are all native speakers of the digital language of computers, video games and the internet. However, this is not the case for many adults, who are therefore described as 'digital immigrants'. They were not born into the digital world, so have had to adapt. In so doing, some have managed to adapt (acculturate) more successfully than others.

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[58] DCMS & BERR (2009) Op cit.
[59] Prensky, M. (2001). Digital Natives, Digital Immigants. Retrieved 19 March 2010 from: http://www.hfmboces.org/HFMDistrictServices/TechYES/PrenskyDigitalNatives.pdf

This distinction indicates a critical generational difference in the ability and predisposition to use ICT. For the current generation of young people, the use of digital technology has been completely normalised. 'Digital natives', or M-Agers[60], are regarded as young people aged 16 – 24/25, who have grown up with digital communications and have different expectations and needs of how they engage, converse and expect information to be presented. They are often characterised as being visually literate and as having highly developed visual-spatial skills. They are experiential, shift their attention from one task to another with great rapidity, are highly digitally literate (in how they use the media) and are well connected in a social context. Moreover, ICT has been fully integrated by this generation into their daily activities, who use it routinely to make their lives more enjoyable and easier.

The proliferation of the use of technologies has combined with other factors (like changes in family structure and decline in manufacturing industries) to bring about profound shifts in how young people make sense of themselves. For example, the traditional move from identifying with family to a single peer group has now been replaced by identifying with family to multiple peer groups, many of which are virtual. ICT also ensures that young people now have access to an instant, international, dynamically-shifting and vast range of stories and forms of knowledge that can inform their identity management. They can be regarded as living hybrid lives, combining the physical and virtual in a seamless network of communication, information, entertainment and sharing[61]. Moreover, these identities are rarely unified, but rather multiple in nature and increasingly fragmented[62].

In contrast, digital immigrants were not born into the digital age, but may have become fascinated by it, adopting many aspects of the new technology. However, like all immigrants, some learn better than others to adapt to their new environment and will always retain their 'accent' – some stronger than others. They were socialised differently from the generation of digital natives and can be regarded as speaking a different language. Importantly for careers guidance service delivery, since practitioners (predominantly digital immigrants) are likely to judge online against an ideal of face to face communication (although this is slowly changing), whilst young people evaluate services against a wide range of options, including instant messaging, chat, phone, SMS and face to face – according to their communication needs. The criteria used by young people to judge methods of delivery for careers guidance are likely to range from immediacy, message complexity, mobility to cost, privacy and embarrassment (YouthNet, 2009, p.10). This is supported by findings from recent research which explored young peoples' expectations of ICT in careers service delivery compared with Connexions Personal Advisers[63].

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[60] Mobile Agers YouthNet, 2009, p.10. Op cit.
[61] YouthNet (2009) Op cit.
[62] Murakami, K. (2008). Re-imagining the future: young people's construction of identities through digital storytelling. London: DCSF/Futurelab. Retrieved 4 August 2009, from http://www.beyondcurrenthorizons.org.uk/wp-content/uploads/final_murakami_youngpeoplesdigitalstorytelling_20081201_jb2.pdf
[63] Bimrose, et.al. (in press). Op cit.

Whilst the young people who participated in the research could see the potential of ICT to develop communication with Personal Advisers, the Personal Advisers were almost unanimous in their firm and unshakable belief that retaining face to face contact with all young people would (indisputably) ensure that the best possible services were delivered. It is important to note that the young people in the study valued, highly, face to face contact with Personal Advisers – but were also interested in a wider range of methods for delivering different aspects of the service.

So far as careers services for young people are concerned, then, a large proportion of clients of youth services will be digital natives and the majority of careers practitioners will be digital immigrants (though this balance will change over time). However, for careers services for adults, a significant proportion of the clients of the new Adult Advancement and Careers Service will be digital immigrants, as well as the majority of practitioners delivering the service.

A recent review of digital user skills[64] noted that a national strategy is still lacking that addresses the digital skills gaps that have been identified in the general population and that the digital divide is widening for those most at risk, specifically: adults over 65 years old, the socially excluded; and those with few or no qualifications. A key barrier to up-skilling the adult population for the technological challenges ahead is identified as attitude to ICT. 'Resistors' and those who are 'not interested' are two problematic groups of adults who currently have access to ICT, but who do not use it. The notion that some adults who have access to technology persistently refuse to engage is particularly relevant in this context. Despite the findings from this national review into digital user skills, the blueprint for the new Adult Advancement and Careers Service[65] appears to espouse a quite different view of the predisposition of a significant sector of the potential client base it is being designed to serve:

> A large proportion of adults in England will be comfortable accessing the adult advancement and careers service online and we want to encourage them to do that: for example through the use of social networking sites such as Facebook and Twitter.

(BIS, 2010, p.5, para. 22)

One other important factor is the UK's current readiness to exploit the dramatic shift to digital technology, globally. A recent national assessment of 'digital Britain' concludes that the UK still lags well behind the USA[66]. Over the next five years, wired and wireless communications and broadcasting networks will have to be upgraded so that the UK can maintain its position. This situation is reflected across all careers services. The lack of a robust and up-to-date ICT infrastructure, both at national and local levels, is perhaps the most serious impediment to the wide-scale implementation of integrated ICT services to clients in the short term[67].

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[64] BIS (2009) Op cit.
[65] BIS (2010) Op cit.
[66] DCMS & BERR (2009), p.4. Op cit.
[67] Bimrose *et al*., (in press). Op cit.

3.3 The digital divide

We are at a point of technology development where we need a programme to ensure that everyone can connect to the digital economy, that its benefits and advantages are available to all...We must ensure that being digital is within the grasp of everyone. If we do not, we risk leaving significant parts of our society disenfranchised and permanently behind the mainstream. In so doing, we would fail to secure the full potential of these technologies for our country.

(DCMS & BERR, 2009, p,5[68])

There is a clearly an urgent imperative to exploit the untapped potential of ICT to enhance all aspects of educational service provision, including careers guidance, with 52 per cent of learners over the age of 14 having reported that they learn through the internet and 22 per cent using distance learning[69]. Indeed, 56 per cent of UK households now have broadband access. However, although these statistics provide a powerful indication of the potential reach of ICT into the lives of individuals, they indicate some significant differences between social groups. For example, whilst 97 per cent of children from social class AB had internet access at home, only 69 per cent of children from social class E had access[70].

The 'digital divide' along the lines of social class membership poses a considerable challenge for the introduction of integrated ICT services into careers guidance. For example, recent research indicates that whilst young people thought that the Connexions Direct website was a 'good idea', very few of the 135 research participants had actually accessed it (cited in Hutchinson & Parker, 2009[71], p.39). The recent review of the UK's technological readiness indicates how the Government is examining ways of ensuring that the most disadvantaged young people are not left behind because they lack the technical facilities they need in their homes. There is equal concern about adults who are disadvantaged because they lack crucial digital life and work skills[72].

It needs to be remembered, therefore, that there is a real danger that disadvantaged individuals, with a particular need for careers guidance support, will be excluded if service delivery comes to depend on access to ICT before national policies address the twin issues of digital infrastructure and digital user skills. To what extent, therefore, has ICT been integrated so far into service delivery?

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[68] DCSM & BERR (2009) Op ci.
[69] Department for Children Schools and Families & Department for Business Innovation & Skills (2009). Next Generation Learning: The implementation plan for 2009-2012. Coventry: Becta. Retrieved 5 August 2009, from http://feandskills.becta.org.uk/download.cfm?resID=40494
[70] Becta (2008). Harnessing Technology Review 2008: The role of technology and its impact on education. Coventry: Becta. Retrieved 5 August 2009, from http://feandskills.becta.org.uk/display.cfm?resID=38751andpage=1886andcatID=1868
[71] Hutchinson, J., and Parker, G. (2009). How do young people (in the region) form their views on future learning and career options? Retrieved 13 August 2009, from http://www.skillsnortheast.co.uk/lib/liDownload/15070/Final%20Report.pdf?CFID=5884732andCFTOKEN=77424167
[72] DCMS & Berr (2009) p.65. Op cit.

3.4 The use of ICT in IAG

Technology is not just an add-on – another resource like the others in the careers room: it raises strategic planning issues at every turn.

(Palomba, 2009, p.70[73])

The use of internet-based services to deliver high quality, impartial careers guidance is increasingly emphasised by policy (see section 1.1 above). However, the use of these services in practice not only varies in the UK between and within the four home countries, but also between sectors of the careers guidance community that provide services for adults compared with those who provide services for young people in England[74]. When looking for examples of where the use of internet-based guidance is fully integrated into other methods of delivery, including group work and face-to-face, it appears that the higher education sector is the most highly developed[75]. Indeed, careers services located in higher education institutions have been proactive for a number of years in developing the use of 'e-guidance' interventions with clients[76].

Investigating issues related to the use of ICT in careers guidance and the competences required by practitioners is not new (for example, NCET, 1994[77] & 1996[78]; Closs & Miller, 1997[79]; Offer, 1998[80]; Becta, 2001[81]; Hunt, 2003[82]). An historical account of the use of information technology in careers education and guidance from 1970 to 1997 charts the emergence of new technologies and their integration into practice (Offer,1998[83]).

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[73] Palomba (2009). Op cit.

[74] Barnes, A. and La Gro, N. (2009). Using ICT: a step change in career guidance or a sop to the twittering classes? Constructing the Future: Career Guidance for Changing Contexts. Stourbridge: ICG Publications, 1, pp 70-78. Retrieved 4 December, 2009 from: http://www.icg-uk.org/c2/uploads/8%20barnes%20and%20la%20gro.pdf

[75] The Careers Advice Service (previously learndirect) offers telephone and web-based guidance support, though does not offer any face-to-face interventions.

[76] Madahar, L. and Offer, M. (2004). Managing e-guidance interventions within HE careers services: a new approach to providing guidance at a distance. Manchester: HECSU. Retrieved 4 August 2009, from http://www.prospects.ac.uk/downloads/csdesk/members/reports/EGUIDANCE_RESEARCH_REPORT.pdf

[77] National Council for Educational Technology (1994)(Ed.). The Future Use of Information Technology in Guidance. Coventry: National Council for Educational Technology.

[78] National Council for Educational Technology. (1996). Getting Started: Using IT in Careers Education and Guidance. Coventry: National Council for Educational Technology.

[79] Closs, S. J., and Miller, I. M. (1997). IT in Guidance: Careers Guidance at a Distance. An evaluation of desktop video conferencing technology. Sudbury: Department for Education and Employment.

[80] Offer, M.S. (1998). Information Technology in Careers Education and Guidance. An historical perspective, 1970-1997. In M. Crawford, R. Edwards and Kydd, L. (eds.) Taking Issue. Debates on Guidance and Counselling in Learning (pp.139-152). London: Routledge.

[81] Becta (2001). Connecting Careers and ICT. Coventry: Connexions Service National Unit.

[82] Hunt, M. (2003). ICT and the E word – E learning, E guidance, E what? Trait Publisher. Retrieved 3 August 2009, from http://www.cegnet.co.uk/resource/content/files/458.doc

[83] Offer, M. (1998). Op cit.

Literature reviews are also available on different aspects of this subject (e.g. Bosley, Krechowiecka & Moon, 2005[84]) with bibliographies focusing on different aspects of ICT in guidance also available[85]. Additionally, literature is available on:

- policy and practice (e.g. Watts, 2001[86]; Commission of the European Communities, 2008[87]; Watts & Offer, 2006[88]);

- the implications for the practice of IAG of the introduction of ICT (e.g. Evangelista, 2003[89] & 2006[90]; Plant, 2002[91]; Offer, Sampson & Watts, 2001[92]);

- practical guides and checklists (e.g. Madahar & Offer, 2004[93]; Offer, 2002[94]; Offer, 2004a[95], 2004b[96] & 2004c[97]; Sampson, Carr, Panke, Arkin, Minvielle, & Vernick, 2003[98]);

- checklists for evaluating the quality of different types of ICT for guidance[99].

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[84] Bosley, C., Krechowiecka, I., and Moon, S. (2005). Review of literature on the use of information and communication technology in the context of careers education and guidance. Derby: Centre for Guidance Studies, University of Derby. Retrieved 3 August 2009, from http://www.derby.ac.uk/files/icegs_review_of_literature_on_the_use_of_ict2005.pdf

[85] Bibliographies available include: ICT skills for guidance counselling: a bibliography from the UK; telephone based services & ICT in IAG: brief literature review; use of information communication technology (ICT); and E-Guidance in Information, advice and guidance.

[86] Watts, A. G. (2001). The role of information and communication technologies in an integrated career information and guidance system. Brussels: European Commission and OECD. Retrieved 3 August 2009, from http://www.oecd.org/dataoecd/35/44/2698249.pdf

[87] Commission of the European Communities (2008). The Use of ICT to support innovation and lifelong learning for all – a report on progress (Commission Staff Working Document). Retrieved 4 August 2009, from http://ec.europa.eu/education/lifelong-learning-programme/doc/sec2629.pdf

[88] Watts & Offer (2006). Op cit.

[89] Evangelista (2003). Op cit

[90] Evangelista, L. (2006). A final statement of the much debated issue if in depth guidance can be delivered using the internet. Retrieved 3 August 2009, from http://www.orientamento.it/english/statement.htm

[91] Plant, P. (2002). IT in careers guidance: constructs and learning. Computer assisted careers guidance: Some European perspectives. Retrieved 4 August 2009, from http://www.guidanceforum.net/pages/res_general/itguidanceconstructlearning.doc

[92] Offer, M., Sampson, J.P. and Watts, A. (2001). Careers Services: Technology and the Future. NICEC Briefing Paper. Manchester: HECSU. Retrieved 3 August 2009, from http://www.hecsu.ac.uk/hecsu.rd/documents/Reports/Technology%20and%20the%20future.pdf

[93] Madahar & Offer (2004). Op cit.

[94] Offer, M. (2002). Getting started with the internet in adult guidance. Cambridge: NICEC. Retrieved 3 August 2009, from http://www.guidanceforum.net/pages/res_general/Internet_Guide_PDF_Master.pdf

[95] Offer, M. (2004a). Giving guidance by email: Advisers' checklist. Manchester: Graduate Prospects and HECSU. Retrieved 3 August 2009, from http://www.guidance-research.org/EG/new-approach/ipgpict/Imp1iii/Imppgpictegres/ImpPCIe-gr/attach/Checklist%20briefing%20-%20orange.pdf

[96] Offer, M. (2004b). What is e-guidance? Using information and communications technology effectively in guidance services. Manchester: Graduate Prospects and HECSU. Retrieved 3 August 2009, from http://www.prospects.ac.uk/downloads/csdesk/eguidance/what_is_e-guidance.pdf

[97] Offer, M. (2004c). Careers Service Web Site Design. Manchester: Graduate Prospects and HECSU.

[98] Sampson, J. P, Carr, D. L., Panke, J., Arkin, S., Minvielle, M., and Vernick, S. H. (2003). Design Strategies for Need-Based Internet Web Sites in Counseling and Career Services (Technical Report Number 28). Florida: Florida State University Retrieved 3 August 2009, from http://www.career.fsu.edu/documents/technical%20reports/Technical%20Report%2028/TR-28.doc

[99] For example: Evaluating the quality of websites; evaluating information; evaluating internet research sources.

Alongside the steady increase in levels of usage of internet-based services in different parts of the careers guidance sector, there has also been a 'proliferation' of projects focused on enhancing the skills of careers guidance practitioners in their use of internet-based services'[100] (p.75).

Perhaps because of the speed at which digital technologies are developing, keeping up-to-date with those most relevant for careers guidance, in addition to understanding, their potential impact represents something of a challenge for service providers. Not unrelated to the wide range of methods included under the term 'internet-based guidance' (see section 1.3, above) is the gap in understanding of what the effective use of internet-based services in careers guidance practice actually comprises[101]. However, the evidence that does exist provides an indication that cost savings on the introduction of internet based careers guidance is likely to be minimal[102].

With the next generation technology (Web 3.0) already on the horizon, the need to begin to align new technologies with service delivery for careers guidance is becoming more urgent. So to what extent is ICT currently used in the delivery of careers guidance and what are the barriers to integration and implementation? Three purposes for the use of ICT in careers guidance have been identified: as a resource; for communication; and for material development[103].

> *ICT as a resource*: As indicated above (section 1.3), for careers guidance, the use of the internet as a resource, especially for labour market information (LMI), is already common in services both for young people and for adults. Yet the potential to use technology to interrogate a wide range of sources, judge the efficacy of different sources, integrate data from a range of sources and disseminate creatively in different formats for different audiences has not been fully realised.

> *ICT for communication*: The use of technology for communication with users in careers guidance remains embryonic, with emails and text messaging playing only a marginal part in the interactions between practitioners and young people.

> *ICT for material development*: Developing different types of materials is probably the most under-developed purpose for internet-based guidance services currently, with considerable untapped potential for the enhancement of materials for young people. Knowledge could be refined, shared and stored within organisational structures so that it is not lost (e.g. when individual employees move on) and could be formally developed and enriched by collaborative endeavour.

> (Barnes, La Gro and Watts, 2010, p.3)

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[100] Barnes and La Gro (2009). Op cit.
[101] Barnes and La Gro (2009). Watts, (2001). Op cit.
[102] Offer *et al*. (2001); Madahar and Offer (2004).
[103] Barnes, La Gro and Watts (2010). Op cit.

However, as indicated in section 1.3 above, along with the undoubted potential of internet-based guidance services, there come considerable challenges. For example:

- *Safety and security*: as the internet fosters and supports the establishment and growth of new groups and communities, identity, privacy and safety for young people will become increasingly important[104]. Whilst measures are being taken to develop mechanisms to increase the safety of young people, this is likely to involve a long-term national strategy. In the meantime, careers guidance will have to develop its' own structures and procedures to safeguard the clients who wish to use online methods of communication and interaction.

- *Role of the 'expert'*: as the rapid growth in user (self-generated) content increases, the culture of self-sufficiency will challenge thinking of who, exactly, is the expert (see section 2, above)? In an era when every individual could potentially access information on the web, how does this re-configure the role of the careers practitioner? The careers guidance community needs to address this fundamental challenge to the added value offered by its services. Any workforce development strategy must support and require practitioners to develop skills and understanding that enable them to work more creatively with clients, helping them to develop skills they need themselves to search, merge and mediate LMI to different client groups at different stages of their career development.

- *Intellectual property*: anywhere that information is produced by collaborative effort, this becomes an issue. Information produced by employees of a particular organisation could be regarded as the intellectual property of that particular organisation – yet can potentially be easily accessed freely available over the web (Anderson, 2007). There needs to be a re-examination of contracting procedures that engender competition and discourage collaboration amongst careers organizations. Where this could be encouraged and supported, the pooling of expertise across organizational boundaries – now made possible by ICT – would offer significant enhancement of LMI resources for all clients. Though there will be issues of copyright and ownership of such materials to be resolved.

The next section will discuss key issues related to workforce development for careers guidance in the integrated use of ICT in service delivery.

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[104] UK Council for Child Internet Safety has recently been given this responsibility.

4. Workforce development for implementation

The critical issue of the workforce capacity to deliver LMI through the media of ICT within the careers guidance process will be considered in this section. Given the speed of change of internet-based methods to deliver careers guidance, the new generation access networks on the horizon[105] and the current skill gaps amongst the careers guidance workforce, what is currently known about the skills and competencies required for internet-based guidance? Are there current skill gaps? If so, what are they? How can these be addressed and what are the challenges?

4.1 The current state of play

Nationally, a basic entitlement to digital life skills for all adults is proposed as the immediate way forward[106] (p.34). Detailed specifications of 'digital skills' are available[107] (p.36) with next generation user skill specifications heralding the way forward on the skill development front[108] (p.15). There is, undoubtedly, a national challenge to be met before the UK population (particularly adults) is equipped, properly, for the digital age. The careers guidance workforce, together with a significant proportion of its clients, is part of that adult population, with many of the same generic ICT skill development issues. Some will require basic digital life skills training and a proportion will fall into the categories of adults who either have access to the internet, but who resist using it or are simply not interested.

Evidence on the particular skill sets, together with the competency frameworks within which these skill sets would be situated, is currently limited for the careers guidance sector. Nevertheless, a number of relevant investigations have been completed at the national level, the European level and at the international level[109]. In addition to the competences and skills required by practitioners, consideration has also been given to the important issue of ethical principles for e-guidance delivery and usage[110].

From studies like these, a strong consensus has emerged around ICT ability needing to be regarded as integral to the overall professional capability required by careers practitioners. Moreover, skill-sets of both careers guidance practitioners and their managers for responding to the changing interface between internet-based services and user behaviour are currently 'broadly underdeveloped'[111] (p.7).

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[105] Department for Media, Culture and Sport and the Department for Business Enterprise and Regulatory Reform, 2009.
[106] BIS (2009). Op cit.
[107] Green, H., and Hannon, C. (2007). Their Space: Education for a digital generation. London: Demos. Retrieved 3 August 2009, from http://www.demos.co.uk/files/Their%20space%20-%20web.pdf
[108] Kay, D., McGonigle, B., Patterson, W. and Tabbiner, B. (2009). 'Next Generation User Skills'. In ALT-C 2009 "In dreams begins responsibility" – choice, evidence and change, 8 – 10 September 2009, Manchester. Retrieved 12 December 2009 from http://repository.alt.ac.uk/644/1/ALT-C_09_proceedings_090806_web_0291.pdf
[109] Bimrose *et al* (in press). Op cit.
[110] Ariadne (2004). Op cit. Vuorinen, R. and Sampson, J.P, (2009). Ethical guidelines for e-guidance delivery and usage. eGOS. Retrieved 4 August 2009, from http://www.egos-cip.eu/sites/default/files/D3.1%20Ethical%20guidelines%20for%20e-guidance%20delivery%20and%20usage_1.pdf
[111] Hughes & Gration (2009). Op cit.

The potentially detrimental impact on the careers guidance sector of this deficit was confirmed by a recent evaluation of the skills needs and training supply for careers guidance recently commissioned by Lifelong Learning UK (LLUK)[112], which concluded that:

> *At present, there is widespread acknowledgement and anticipation that the occupation is moving in the direction of more widespread ICT-based provision of Careers Guidance services to customers and clients. However, the knowledge base of the Career Guidance workforce which is necessary to use ICT technology can be lacking ... This is not conducive to the direction in which the occupation as a whole is moving, with its intended shift towards better and more substantial ICT-based public access through the internet and telecommunications.*

<div align="right">(Cobbett, Dodd, Miller, & Shearer, 2009, para. 8.1.3)</div>

If a skills gap has been both identified, and accepted, as existing, what are the workforce capacity and development issues for this area of careers practice?

4.2 Skills and competencies for internet based careers guidance

To establish precisely what skills and competencies are required by the careers workforce to deliver services using ICT, it is necessary to look beyond the careers sector to the IT sector itself. Three main categories of e-skills have been identified:

1 **ICT practitioner skills**: *referring to the skills required to design, develop and maintain ICT systems.*

2 **E-business skills**: *referring to the skills necessary to exploit ICT for new business opportunities.*

3 **ICT user skills**: *required for the effective application of ICT systems by individuals. In general ('digital literacy').*

<div align="right">(CEN, 2008)</div>

Of these three categories, user skills are clearly the most relevant for careers guidance, since practitioners will need to use ICT efficiently and effectively to deliver internet-based services. In addition to ICT user skills, careers practitioners will need to understand how best to select and transfer skills and knowledge developed from face to face interactions with clients, to service delivery using various internet-based methods.

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[112] Cobbett, D., Dodd, F., Miller, S. and Shearer, L. (2009). Skills needs and training supply for career guidance – a gap analysis. Newcastle upon Tyne: Trends Business Research Ltd.

Indeed, recent research[113] argues that the skills and competences required for internet-based careers guidance need to be regarded as two separate, but inter-related domains. One domain relates to ICT user skills and competencies, whilst the other relates to more generic careers guidance skills and competencies. Generic skills will need to be transferred selectively and adapted to different operational contexts. For example, the use of the telephone as a method of delivering careers guidance requires highly developed active listening skills to establish client need, whilst skills of analysing text-based communication are required for the same purpose when working with text based methods, like e-mail and chat rooms. Other careers guidance skills are common across all methods of internet-based guidance (e.g. empathy, contracting, challenging), with ICT user skills (to operate a telephone help line or to lead discussions in a chat room) needed in parallel.

4.3. Challenges for workforce development

Even though limited, existing evidence is clear[114]. Current patterns of ICT usage in careers guidance service delivery in England largely reflects the routine requirements for the workforce to engage with technology for mandatory purposes (e.g. inputting data into management information systems), but when it comes to its use in a proactive, innovative and creative way to deliver careers guidance using iCT, this is constrained and restricted – often by the contexts in which practitioners operate. So what are current challenges for workforce development?

- *Training support*: is both crucial and urgent for careers services wishing to deliver a fully integrated service with an effective internet-based component.

  In the longer term, further research is required to explore effective ways of providing support for practitioners so that they can acquire the knowledge of how to adopt and use technologies[115]. Indeed, current evidence indicates that the effective use of ICT will depend increasingly depend less on the specifics of user skills and more on a generic understanding around it. So skills and competencies will form only part of the foundations of confidence and adequate competence of ICT use[116] (Dixon, 2009).

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[113] Bimrose *et al*. (in press) Op cit.
[114] Bimrose *et al*. (in press) Op cit.
[115] Price, S., Roussos, G., Falcão, T. P., and Sheridan, J. G. (2009). Technology and embodiment: relationships and implications for knowledge, creativity and communication. London: Futurelab/DCSF. Retrieved 4 August 2009, from http://www.beyondcurrenthorizons.org.uk/wp-content/uploads/ch3_final_sarahpricefinal.pdf
[116] Dixon, M. (2009). Information and communication technology, work and employment. London: DCSF/Futurelab. Retrieved 4 August 2009, from http://www.beyondcurrenthorizons.org.uk/wp-content/uploads/ch4_dixonmatthew_infotechnologyworkemployment20090116.pdf

In the short term, training support will be required to raise levels of confidence and awareness of already existing skills and competencies and how they can be used (digital literacy)[117]. An on-line e-learning pilot training course is (at the time of writing) currently underway with practitioners employed by CfBT, which is focusing on this aspect of workforce development[118]. Additionally, training support that focuses on how to select and transfer existing key careers guidance skills (like summarising and listening skills for telephone guidance) is indicated for those practitioners using particular methods of delivery.

■ *A development approach*: whilst progress has been made on identifying the skills and competences required for this area of practice, this body of work has, so far, neglected well-established criticisms of the competence based approach to work-based learning[119].

One of particular relevance in this particular context is the exclusive focus on level (whether a certain skill and/or competence has been reached or not) rather than incorporating the notion that skill and competence can be developed at a number of levels (including those below as well as above the assessed level). This type of developmental approach to skill and competence would incorporate the concept of expertise existing across a range of criteria (e.g. through 'technically able to perform a task but with limited practical experience' to 'world class', where individuals are able to think through, and if necessary, bring about changes in the ways that tasks are tackled). Such an approach incorporates a commitment to continuous improvement, essential for this area of competence development[120] (Brown, 2008) in the career workforce.

■ *An integrating framework for careers practice*: there is also a need to provide training support for the integration of skills within evidence-based frameworks for careers practice, so that the skills and competencies required for internet based careers guidance are firmly grounded. This is essential to ensure that training for the ICT does not become fragmented from mainstream frameworks for practice. The requirement to embed training for ICT within an evidence-based framework for practice was confirmed by the recent analysis of skills gaps in the IAG workforce[121]:

> *ICT-based training which is specifically tailored to the context of Career Guidance is lacking. For example, whilst ICT competency training such as the ECDL is available, this is not provided through a grounded Career Guidance framework, and as such does not ensure the targeted development of skills specific to using a computer for Career Guidance purposes.*

(Cobbett *et al.*, 2009, para. 8.1.3)

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[117] BIS (2009). Op cit. Kay *et al.*, (2009). Op cit.
[118] The Warwick Institute for Employment Research is delivering this innovative training package (March – April, 2010).
[119] Wolf, A. (1995). Competence-based assessment. Buckingham: Open University Press.
[120] Brown, A. (2008). Limitations of levels, learning outcomes and qualifications as drivers towards a more knowledge-based society?, US-China Education Review, 5(1), 9-17. Retrieved 10 August 2009, from http://www.teacher.org.cn/doc/ucedu200801/ucedu20080102.pdf
[121] Cobbett *et al.*, (2009). Op cit.

4.4 Necessary but insufficient?

Workforce development will be essential for the successful implementation of effective integrated internet-based careers services. Though will this be sufficient? Recent research[122] indicates other critical success factors that will need to be addressed. Some have been mentioned above. They include high quality technical infrastructure and technical support; a systematic approach to change management; and the empowerment and engagement of clients of the service.

The pressurised operational contexts in which careers organisations currently work simply define other, more pressing, priorities, with a tendency to squeeze out any systematic focus on the use of ICT as a developmental issue. Managers have identified constraints on resources likely to be available in the near future to up-grade technology as a major barrier to implementation[123]. These relate both to the technological infrastructure required to deliver ICT based services and the ongoing technological support that is essential. Additionally, practitioners are similarly cautious about the inhibiting impacts of both the technological infrastructure to which they had access through their careers organizations, as well as the unreliability and the unpredictability of technology in the schools in which they worked[124]. This resourcing need around technology has implications for the funders of public services who regard internet-based guidance as a policy priority.

It will be essential to win the hearts and minds of managers and practitioners managers by persuading them that the benefits of embracing these methods of delivery outweigh the investment of effort and resource required to make the transition to more flexible methods of delivery. Genuine commitment from all levels of management will be crucial – providing system leadership, change management and innovation in this area as well as ensuring that the technical infrastructure is fit for purpose, able to support high levels of sophisticated usage. A fundamental attitude change is indicated at all staffing levels of careers services.

Finally, as indicated above, it should be emphasised that the extent to which careers practitioners are able to deliver efficient and effective integrated internet-based careers guidance uniformly to their clients will always depend, in part at least, on the extent to which their clients are engaged and empowered. This aspect of provision is likely to be largely outside the control of careers services, since fundamental social equity issues are implicated regarding equal access to technology and a technological infrastructure that is fit for purpose.

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[122] Bimrose *et al* (in press). Op cit.
[123] Bimrose *et al* (in press). Op cit.
[124] Bimrose *et al* (in press). Op cit.

These challenges will need to be addressed before effective and efficient integrated internet-based careers guidance services can be delivered effectively and uniformly to clients. The next section will explore examples of how these challenges are being, or have been, addressed. One focuses on current practice and reviews three websites, illustrative of different approaches to internet-based guidance. The other focuses on future prospects, by presenting cutting edge research and development of ICT systems to support careers practitioners in two different areas of their work (using LMI and continuing professional development).

5. Learning from experience

There are undoubtedly many examples of good and interesting, innovative practice in the broad area of ICT, LMI and IAG in careers organisations in the UK and internationally. A recent call for evidence by the Institute for Career Guidance (ICG) had over thirty responses, with twelve in the area of LMI and ICT. However, this call for evidence went out to the membership of the ICG only, so is not representative of the sector as a whole. Additionally, responses were required by a tight time frame, so many who might have responded may not have done so. It does, however, give some indication of work underway that is relevant to progress in this area of practice. One existing issue, undoubtedly, is the lack of any mechanism for drawing together examples of good and interesting practice as a repository of knowledge from which others in the broad community of careers guidance practice can learn. The transfer of knowledge, which itself could benefit from the application of ICT, is therefore currently lacking. Another issue is that the existence of innovatory practice in this area does not comprise evidence of what works well for clients.

This first part of this section will present a selection of current practice, with a particular focus on LMI, ICT and IAG, drawing on previous research. The second part will give a brief overview of European funded, innovatory research underway in this area.

5.1 Current practice: LMI, ICT and IAG

A number of ICT developments in the area of careers guidance are focusing on particular aspects of the careers guidance process, with a focus on systems that are for usage by clients of the careers guidance process. With the introduction of the Area Prospectus, the use of e-portfolios (and similar) is becoming increasingly common. For example[125], an online record of achievement for young people aged 11 – 19 in Nottinghamshire, where the aim is to: 'help you to find out more about yourself, show what you have achieved, and take control of your future!' Many of these types of initiatives have developed around the country. Another example from the tertiary education sector relates to the School of Medicine at the University of Leeds, which is using social networking and e-portfolios to support the career development of its students.

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[125] Passportfolio: link https://www.passportfolio.com/About.aspx

Using ICT to provide more integrated careers guidance services is challenging. The larger the resource base underpinning the development and maintenance, the more comprehensive is the website. For example, Careers Wales has developed its own website[126], as has Careers Scotland[127], Careers Service Northern Ireland[128] and the Careers Advice Service[129]. In England, Connexions Direct is available for young people[130] with nextstep[131] for adults (pending the launch of the new website for the adult service). Whilst these two portals serve as a central resource for clients in England, each Connexions and nextstep company have their own website portal, mainly for providing information and signposting clients.

Resources available for individual organisations are likely to be more restricted than those for national services. Nevertheless, there are examples of innovatory practice that are beginning to emerge. One interesting example that is at an early stage of development is the Milton Keynes Virtual Connexions Centre[132], experimenting with the use of avatars. This, again, is aimed at young people (13 – 19) and is 'to get help and advice on a range of different issues'. More specifically, the menu indicates 'what you can do here' as follows:

- Create your own Personal Profile.

- Chat online with a Personal Adviser.

- Explore the interactive 3D environment.

- Get the latest info on jobs, training and further education.

- Play our CV game and create your own CV.

- View video clips.

- Join our Online Radio Project.

- Sign up for Infiniteams team building games.

- Click on poste.

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126 Careers Wales: http://fvrww.careerswales.com/server.php?show=nav.5334
127 Careers Scotland: http://www.careers-scotland.org.uk/home/home.asp
128 Careers Service Northern Ireland: https://www.careersserviceni.com/Cultures/en-GB/Homepage.htm
129 http://careersadvice.direct.gov.uk/
130 http://www.connexions-direct.com/
131 http://www.direct.gov.uk/en/educationandlearning/adultlearning/dg_071762
132 Milton Keynes virtual Connexions centre: http://www.mysaymk.com/positiveactivities/

However, the focus here will be on examples that have taken as a particular focus LMI, ICT and IAG. For this, findings from research that was undertaken in 2006[133] that explored how ICT could be used to provide LMI and local LMI (LLMI) as part of the careers guidance process will be drawn upon. For this research, an initial keyword search, using 'labour market information', 'local labour market information', 'real-time labour market information', career development and career guidance yielded approximately 120 website hits. The results from this search were refined, leaving thirty three websites. From these, ten were selected for scrutiny. The ten websites were selected from the following four countries: Australia, New Zealand, the United Kingdom and Canada. Each was reviewed against the following criteria:

- The primary purpose and target group (to address the question: 'Why was this website set up?').

- Types of LMI and LLMI (to address the question: 'What might LMI and LLMI for career guidance look like in practice, considering examples from the rest of the UK, the US, Australia and Canada?').

- The interfaces through which LMI/LLMI can be accessed (to address the question: 'How might it be delivered?').

- The suitability of the LMI/LLMI (to address the question: 'What lessons can be learned?').

- The registration process (to address the question: What lessons can be learned?).

- Any additional noteworthy aspects of the site (again, to address the question: What lessons can be learned?).

The in-depth research into the ten websites providing LMI/LLMI as part of the services provided by career counselling, career development or progression websites provided insights into the process of setting up and maintaining this type of website, together with the start-up and operational costs. From this review, examples of the broad careers guidance topics offered across the ten websites were identified. These included:

- Personal profiling/career portfolio

- Trends and patterns of work

- Occupations

- Education and training

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[133] University of Strathclyde and Bimrose, J. (2006) 'Labour market information for career decision-making', Coventry: Centre for Studies in Enterprise, Career Development and Work and Warwick Institute for Employment Research.

- Choosing subjects

- Getting a job

- Becoming self-employed

- Working overseas

- Getting back to work after long absence

- How to perform in the labour market

- Self-assessment/career match

- CV builder

- Course search

- Work search

- Student life

A summary of key findings from this research can be found in Appendix 1.

A current example of the use of ICT to deliver LMI as a part of the careers guidance process is from Connexions Kent. Here, a three year research project, which piloted three versions of a website with young people and careers professionals, has resulted in a website for young people called Careers Constructor, which has LMI at its centre. This website integrates LMI from various sources (e.g. from Connexions Direct website and icould[134]) so that users (in this case, young people) can research, store, develop and refine their own personalised LMI – then use this as a basis for developing their personal profile and CV. This can all be done with the help or career professionals and/or peers. It is due for launch in April, 2010.

One final current example from Finland relates to the highly successful use of ICT to manage work experience placements for students. For students, the website[135] provides information on educational providers, occupations, links to the companies providing placements, examples of assignments, information how to contact the companies etc. Some of the materials are presented as video clips (e.g. how to prepare yourself in a job interview), with the video having a story, like a reality TV competition.

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[134] Icould: http://icould.com/
[135] Finnish work experience website: http://www.peda.net/veraja/tori/oppilas2/video

Importantly, this development illustrated the integrated use of ICT, since the website can be viewed also in mobile phone (with this being one feature that was included in the usability test for the site). The students have also a platform where they can share their learning diaries or upload any relevant documentation of this period. The materials can be shared with the school counsellor or among other students if it is agreed by the whole group. The students can download videoclips to get prepared for job interviews. The videos can be viewed in mobile phones as well.

The next section will continue the theme of research and development in this area by considering, briefly, an ongoing research project that is working to develop ICT systems to support careers practitioners in England with the use of LMI in their practice, together with their own continuing professional development in this area.

5.2 Innovatory research: pushing the boundaries

Whilst much innovation using ICT and LMI in IAG is around systems for the clients of careers guidance, there is considerable potential for enhancing the quality (and therefore impact) of services by developing ICT systems to support careers practitioners in their work. An example relates to a European research and development project. MATURE is a four year project (2008-2012) which is being undertaken as part of the European Seventh Framework programme. It is managed by FZI Research Centre for Information Technologies, a technology transfer centre at the University of Karlsruhe, Germany, which has brought together an experienced consortium of experts. There are twelve core partners in this consortium, comprising eight Universities and research institutes (based in Germany, Austria, Switzerland and England) and four companies. Details of these partners can be accessed at: http://mature-ip.eu/en/consortium. Warwick Institute for Employment Research is one of the project partners, working with three application partners that are all careers guidance organisations: Connexions Kent, Connexions Northumberland and CfBT.

The aim of MATURE is to develop technology-based tools to support knowledge-maturing processes within organisations and is based on the idea that organisational agility has become critical for economic competitiveness. For further information about the project, please see Appendix 2. One of its key features is user centred design, which involves an iterative research process, working alongside prospective users of the system to develop and refine what is needed – and what would work – in a particular operational context. Application scenarios for the development of two of the systems under development have been drawn from English careers organisations. The focus of knowledge maturation in the scenarios upon which the systems are being developed is twofold. One is around the development of LMI by careers practitioners to be used for various purposes. The other is the development of a system to support the continuing professional development in the area of LMI for careers guidance.

Specifically, the first system under development is focusing on the development of a technology based tool that will support careers practitioners to research, refine and develop LMI for clients, within a social network of experts. It is currently known as 'Assuring Quality for Social Learning in Content Networks' and is focused on the production of high quality personalised LMI for careers guidance in a particular context.

Assuring Quality for Social Learning in Content Networks

The system will provide a community driven quality assurance process to support practitioners in the development of LMI as part of their daily work. The quality assurance system relates to both the personal need for a careers adviser to find appropriate and up-to-date LMI as fast as possible for the current work context and to the organisational need of achieving a coherent and high quality organisational identity in the development of knowledge products. There is a need for an adviser to have confidence that a document is appropriate for particular purposes. The organisation, on the other hand, is interested in tracking, assuring and contributing to quality of documents and processes. This is achieved by providing indicators for quality assurance, providing access to an overview of the knowledge base and by providing possibilities for researching the knowledge base.

A Semantic Media Wiki was chosen as a basis for the design study prototype, enhanced with additional functionalities. The system demonstrator responds to feedback from a workshop that took place in January 2009 to gain ideas for further development. Thus, this demonstrator is also based on a MediaWiki for content creation and sharing but will provide a different interface. It will be widget based and platform independent. Furthermore, it will allow for a personal and organizational space, taking into account privacy restrictions.

A second system being developed as part of the MATURE project by another technical team is focusing on the identification of particular organisational competencies and skills. The name currently used for this tool is 'people tagging'.

People tagging for internet based careers guidance

Human Resource development needs to have sufficient information about the needs and current capabilities of current employees to make the right decisions. In service delivery contexts that must be responsive to the changing needs of clients, like Connexions services, it is necessary to establish precisely what additional skills and competencies are required to keep up with new developments, like internet-based guidance. The people tagging tool would provide a clear indication of:

- What type of expertise is needed?

- How much of the requisite expertise already exists within the organisation?

- What gaps in specific skills and competencies exist?

Take the scenario of where a novice careers practitioner needs to respond to a client LMI query using internet based guidance. The practitioner does not feel sufficiently confident to respond adequately, so needs to contact a colleague who is more knowledgeable, for support. The key problems would be:

- How does the practitioner find the right person to contact?

- How can the practitioner find people inside, and even outside, the immediate employing organisation with the requisite skills set to support the novice?

- How can appropriate colleagues who might be able to support the practitioner be identified and contacted quickly and efficiently?

Typically, employee directories, which simply list staff and their areas of expertise, have been found to be inadequate. This can be because information contained in the directories becomes outdated quickly; or is not described in a manner relevant to potential users; or focuses too much on 'experts'; and they often do not include external contacts.

The 'people tagging' tool offers an alternative approach to organisational directories, where:

- Colleagues with relevant skills and competencies can be 'tagged' collaboratively with other external contacts (if and where relevant).

- Knowledge can be shared and awareness strengthened within the organisational context around who knows what.

- The tool offers the facility to undertake a collective review of existing skills and competencies on an on-going basis.

The tool therefore offers support for individual learning, where careers practitioners can collaborate with peers with different skills sets from their own. It also offers support for organisational learning by supporting reflection on what is known about other employees and identifying gaps in the current expertise and capabilities of the workforce.

It is hoped that over the period of the project, the two systems will be integrated, so that practitioners can develop their CPD around LMI alongside developing high quality LMI for different purposes. This is an ambitious research and development project which has the potential to improve, fundamentally, the way in which LMI could be produced for careers guidance, using ICT.

6. Conclusions

Information and communication technologies

Technology influences every aspect of our lives and its rapid progression shows no signs of slowing down. It has already made a considerable impact on the ways that careers guidance services are delivered, but there is much untapped potential to be exploited. One key challenge for the immediate future is to ensure that the careers guidance sector is equipped to respond to these demands. Not only does it need to be able to comprehend the potential of a fully integrated system of information and communication technologies (ICT) for increasing the quality and flexibility of services it offers, but it needs, urgently, to develop its workforce capability (managers as well as practitioners) together with its technical infrastructure and policies. Some other challenges that will need to be addressed are beyond the scope of the careers guidance sector. These include safety and privacy issues for service users (especially young people); social equity issues relating to the digital divide; and the national technological infrastructure needed to support the delivery of internet based careers guidance services.

Policy context

With the introduction and implementation of the UK skills agenda has come an increasing emphasis on the key role that career guidance can, and must, play in increasing the nation's economic competitiveness. In England, services for adults remain separate from those for young people, whilst in Wales, Northern Ireland and Scotland, integrated careers services are offered. Running in parallel with the emphasis on the importance of careers guidance has been a dual policy focus on services having high quality labour market information (LMI) at their centre and on integrating ICT in its delivery. Assumptions underpinning this dual focus seem to relate to the potential of high quality employer based LMI for improving the quality of careers guidance and the potential of ICT for increasing the flexibility and therefore impact of services. It remains to be seen whether these assumptions are valid.

Information, advice and guidance (IAG) or careers guidance?

The introduction of the term 'Information, advice and guidance' (IAG) occurred less than a decade ago in England, via the introduction of a policy framework for adults. Although the usage of this term spread more gradually to services for young people in England, its adoption has been somewhat piecemeal both throughout the four home countries of the UK and, indeed, within sub-sectors of the guidance sector. International organisations (e.g. the OECD) and professional associations (e.g. the Institute of Career Guidance) have retained use of the term 'careers guidance', as have many individual professionals, in private if not in public. The introduction of this terminology and the renaming of careers guidance professionals in some parts of the sector resulted in fragmentation of the sector and a crisis in the occupational identity of many practitioners delivering services.

As part of the policy focus on social inclusion and NEETs (young people Not in Education, Employment or Training), the work that careers practitioners had routinely undertaken with employers more-or-less ceased. This has had consequences in terms of the expertise built through strong networks that practitioners typically were able to build with local employers and eroded the knowledge base of practitioners around local labour market information.

Information and communication technologies (ICT) and careers guidance

The potential of using ICT to deliver careers guidance service has long been recognised by the broad community of careers guidance practice. The speed at which technology is developing has resulted in a rapid expansion in the methods identified for the delivery of internet based guidance. Whilst integrated service delivery requires a coherence approach in the use of ICT methods harnessed, a rift is developing in practice. For example, telephone guidance services are now being regarded as a 'separate channel' of delivery for the new adult careers service, existing alongside online and face-to-face services.

The distinction between digital natives and digital immigrants is relevant in this context. Regarding services for young people, the clients are digital natives whilst the majority of practitioners are digital immigrants. In contrast, for services for adults, both the majority of clients and practitioners delivering services will be digital immigrants. This has profound implications for service delivery.

The digital divide is also a factor in the delivery of careers services using internet based service. There is a real danger that disadvantaged individuals, with a particular need for careers guidance support, will be excluded if service delivery comes to depend on access to ICT before national policies address the twin issues of digital infrastructure and digital user skills.

Other challenges to introducing integrated ICT careers guidance services exist, such as safety and privacy, intellectual property and the technological infrastructure within which services will be delivered.

Labour market information for careers guidance delivered through ICT

Different skill sets are required by careers practitioners for providing their clients with direct, unmediated access to LMI through the use of ICT and those required to provide clients with the support necessary for the interpretation of LMI for an individual's particular circumstances and career progression. Whilst many clients want direct access to information, once they have got this, they often need help making sense of it.

The Sector Skills Councils (SSCs) are well positioned to collect and disseminate high quality, current and comprehensive sector-based LMI for careers guidance. However, there are certain limitations associated with the use of this LMI for careers guidance, like the inconsistencies related to the different sizes of SSCs and their inability to respond to client career progression queries that involve transitions between sectors. Additionally, LMI for use in objective careers guidance needs to meet certain criteria (like impartiality).

In their use of LMI in careers guidance through ICT, practitioners will need to become sophisticated in their research and interpretation of data from varied sources. Not only is it becoming increasingly important for practitioners to develop the skills, knowledge and understanding to access, interpret and mediate LMI for their clients, but it is also important for them to support the learning of their clients in this area. This poses a set of challenges for workforce development.

Workforce capability

A strong consensus has emerged around the ability to use ICT being regarded as integral to the overall professional capability required by careers practitioners. However, the current skill-sets of both careers guidance practitioners and their managers for responding to the changing interface between internet-based services and user behaviour are currently broadly underdeveloped, with this skills deficit having a potentially detrimental impact on sector as a whole.

The skills and competences required for internet-based careers guidance need to be regarded as two separate, but inter-related domains. One relates to ICT user skills and competencies, whilst the other relates to more generic careers guidance skills and competencies. Generic skills will need to be transferred selectively and adapted to different operational contexts (like telephone guidance).

Potential for development

Despite the challenges that will have to be addressed, there is enormous and exciting potential in harnessing ICT to deliver LMI focused careers guidance. There are many websites that provide clients with access to LMI and LLMI in many formats. Additionally, there are websites that have attempted to integrate access to LMI with other aspects of careers development (like CV development). The more notable websites are those managed and resourced by national governments.

There are an increasing numbers of examples from the UK context of innovatory practice around the use of LMI and ICT in practice. Though what is notable is an almost exclusive focus on the use of ICT to deliver services to clients, rather than to support careers guidance practitioners to develop their own expertise – particularly in the use of LMI. One research project is currently harnessing technical expertise from Europe to develop systems that focus on supporting careers practitioners in their use of LMI using ICT.

Overall, examples from current practice highlight the innovatory approaches being piloted, that have the promise of supporting the delivery of greatly enhanced services to clients.

Appendices

Appendix 1: A summary of research findings into websites delivering LMI

Reference: University of Strathclyde and Bimrose, J. (2006) 'Labour market information for career decision-making', Coventry: Centre for Studies in Enterprise, Career Development and Work and Warwick Institute for Employment Research.

In-depth research into the ten websites providing LMI/LLMI as part of the services provided by career counselling, career development or progression websites has provided insights into the process of setting up and maintaining this type of website, together with the start-up and operational costs. Specifically:

■ With one exception (that is, a commercial website that offered a job placement service by matching individuals to jobs from a large database) the websites researched were owned and managed by government departments at either the national or regional level.

■ LMI/LLMI was used on the websites researched as part of a much broader menu of career development activities and/or information.

■ The websites researched used other sources of LMI/LLMI.

■ Various methods were used to provide access to LMI/LLMI: direct links to databases and reports; navigational headings like 'Frequently Asked Questions'; 'needs based' categorisation systems (e.g. adult zone, school zone, learning zone); and through a range of different types of search facilities (like job searches).

■ Most websites were designed to meet the needs of both young people and adults, with particular sections targeted at specialist target groups (like school leavers).

■ Most websites researched were still evolving in the sense that they were continuing to improve the structure and content for users. In some cases (e.g. New Zealand) this was in response to two career organisations merging, with the consequence that two websites had to be merged. In others, the process of continuous quality improvement was informed by user feedback.

■ Registration requirements were kept to a minimum. Only where users might wish to store personal information (like in a CV builder) were they required to complete a registration procedure.

■ Only one website offered a section that particularly addressed the needs of disadvantaged groups.

- Three websites provided information relating to costs. From this, it was evident that investment in the start-up costs of this type of website is considerable, with maintenance costs relatively moderate. The number of dedicated team-members working on maintaining and updating websites depended on the size and purpose of the website. This ranged from 14.5 FTEs to 2.7 FTEs.

- Key challenges identified in setting up and maintaining systems to deliver LMI/LLMI for career guidance were: bringing together a team of people with the necessary skillsets; being prepared to start off modestly, then building on experience; setting a timescale that is realistic and can be achieved; and the choice, structure and basic design of the website content.

- None of the websites reported any involvement or support from business.

- Key players were identified as government organisations that were able to provide much of the LMI/LLMI.

- Advice to consider when setting up a similar system included: start off small and expand; keep control of the data upload (rather than contract this out to ICT specialists); and arrange to go and visit at least one website firsthand and talk to those involved in its operation.

Appendix 2: MATURE Publicity flyer

The careers, learning and skills team at the University of Warwick's Institute for Employment Research is working in a consortium of European partners to develop ICT that will support guidance practitioners in their use of labour market information (LMI) with clients. The project is at an early stage of development, but events are planned to ensure that guidance practitioners and managers are fully consulted on problems and barriers to the effective use of LMI in practice. Below is more information about the project- or contact Jenny Bimrose: jenny.bimrose@warwick. ac.uk (telephone 024 7652 4231).

What is MATURE?

MATURE is a four year project (2008-2012) which is being undertaken as part of the European Seventh Framework programme. It is managed by FZI Research Center for Information Technologies, a technology transfer centre at the University of Karlsruhe, Germany, which has brought together an experienced consortium of experts. There are twelve core partners in this consortium, comprising eight Universities and research institutes (based in Germany, Austria, Switzerland and England) and four companies. Details of these partners can be accessed at: http://mature-ip.eu/en/consortium

Aim of MATURE

The aim of MATURE is to develop technology-based tools to support knowledge-maturing processes within organisations and is based on the idea that organisational agility has become critical for economic competitiveness.

What is organisational agility?

This refers to the ways organisations develop the ability to respond quickly to:

■ opportunities, changes in their operating environment and changing stakeholder needs;

■ overcome inertia; and

■ maintain the balance between responding efficiently to stimuli and maintaining their focus.

MATURE is concentrating on the way organisational agility requires organisations to support the development of their employees' competencies, so that the effectiveness of knowledge work and information is improved. Recent failures of organisation-driven approaches to technology enhanced learning contrast sharply with the success of community-driven approaches to developing information and knowledge (like Web 2.0 including, social networking, blogs, wikis, podcasts etc.). This indicates that to achieve agility within organisations, employees' collective skills, knowledge and understanding have to be developed, for example through engagement with collaborative learning activities. This learning and development, in turn, can then be combined with new forms of organisational support for learning and development, and for improving work processes in day-to-day practice.

What are 'knowledge workers' and knowledge-maturing processes?

The global shift away from the industrial society towards the information society brought with it the creation of 'knowledge workers'. Generally, these are people who work primarily with information, or who develop and use knowledge in the workplace. A key assumption underpinning MATURE is that for these workers, individual learning processes are linked to organisational learning in a 'knowledge-maturing process', during which knowledge continually changes in nature. This knowledge can take many forms (for example, related to work tasks or processes) and one goal of MATURE is to understand this maturing process better, so that tools and services can be developed to support this process.

IAG practitioners as knowledge workers?

Information, advice and guidance (IAG) practitioners are knowledge workers in their use labour market information (LMI) because of the requirements for them to: use and obtain different sources of information and knowledge (which is current and accurate) on the labour market; extract key information; interpret and manipulate that data for clients of their service; and share that knowledge with colleagues. Such a process involves continuous learning and knowledge development – knowledge maturing.

What tools and services will MATURE develop?

To support the process of knowledge maturing within organisations, tools and services will be developed by the MATURE project. These will include:

- a Personal Learning & Maturing Environment, embedded into the working environment, enabling and encouraging the individual to engage in maturing/learning activities within communities and beyond;

- an Organisational Learning & Maturing Environment, enabling the organisation to analyse and take-up community activities, to reseed innovation processes and to apply guiding strategies.

MATURE Application Partners and Associate Partners

One of the major outcomes of the MATURE project will be an analysis of real-world maturing practices, resulting in a sound general conceptual model of the knowledge maturing process, together with an understanding of ways to overcome barriers to it (particularly including motivational and social influences).

The project, therefore, has a small number of test – or application – partners, for piloting the tools and processes being developed. These include two UK based organisations offering information, advice and careers guidance.

In addition, MATURE has a number of Associate Partners, consisting of companies of all sizes as well as research institutions. A key role for these Associate Partners is in the dissemination and exploitation activities. This partner network will have early access to project results and will be invited to provide input and feedback to the project developments. MATURE will have at least three associated partner workshops. For information on the current network of Associate Partners, go to:

http://mature-ip.eu/en/associate-partners

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