



The Use of LMI in Online Career Direction and Learning

UK Commission for Employment and Skills

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1 Introduction

This report presents the findings from a study undertaken during September and October 2010 by GHK Consulting on behalf of The UK Commission for Employment and Skills (the UK Commission). It looked at the responsiveness of the online careers market in providing Labour Market Information (LMI) and Information, Advice and Guidance (IAG).

This chapter sets out the main study aims and context, as well as the broader public policy context in which the study is set. It also outlines the analytical framework we developed to focus the research and position it in terms of a much wider set of related policy questions (e.g. *careers services and the role of intermediaries; how users engage with careers services; the impact of technology on people's lives more generally*).

1.1 Study Aims and Context

The study forms part of a wider project being undertaken by the UK Commission, the overall aim of which is to explore how new technologies can be used to provide robust, accessible information, advice and guidance. In June 2010, the UK Commission published two expert papers, which respectively scoped the web environment for career exploration¹ and future prospects for careers services given the interplay between LMI, ICT and IAG².

1.1.1 Key questions

Our study builds on this work to look more specifically at how LMI (from a range of sources) is currently incorporated within online careers products and services and what potential there may be to better use publicly-funded LMI for career purposes.

Specifically, this has involved looking at:

- **What drives the provision of LMI in an online careers context?** The 'service offers' deployed by a range of commercial and public 'IAG providers'.
- **To what extent national data and other publicly-funded sources of LMI (irrespective of whether they are developed for careers purposes) are currently provided within the online careers market or could add value to the online careers market?** Mapping and reviewing data sources (*what information is likely to be relevant; who produces it; how it is made publicly-available*) and considering their potential value and usability in the context of the online careers market.
- **What should be the role of government in achieving the proposed transformation of IAG services in the context of an analysis of the current and emerging online careers market?** Exploration of key themes to address, important issues to consider and future work in the context of the UK Commission's wider project.

The terms of reference for the study define its scope as being England, although many of the findings relating to the online provision of careers information are equally pertinent in a UK-wide context.

It is also important to note that while the study is set within the context of IAG services – the focus on online LMI means that we are primarily looking at careers *information* rather than *advice and guidance services*³. We describe the online presentation of this LMI in terms of *careers tools, products and services*, which are developed and delivered by *IAG providers*. IAG providers in this context may or may not be providing wider careers services (advice and guidance).

¹ *Careering through the web: The potential of Web 2.0 and 3.0 technologies for career development and career support services* The UK Commission, June 2010

² *Labour market information (LMI), information communications and technologies (ICT) and information, advice and guidance (IAG): The way forward?* The UK Commission, June 2010

³ Note that some advice and guidance services are available online and that this is a relevant consideration when looking at where LMI fits within a wider service offer

1.1.2 Study approach

The study itself has been small-scale and targeted to look at *how LMI can be used (and, more concretely, is being used) to benefit users of careers services and online sources of careers information*. In practice, this involved the following activities:

- We undertook a short online review of models for incorporating LMI (i.e. particular careers products, tools and services) in order to build an understanding of the current market, approaches to funding and range of LMI this encompassed. This review covered over 30 organisations / websites and built on the earlier scoping work presented in the 'Careering through the Web' report, published in June 2010.
- We separately identified and reviewed the main public LMI sources (20+ sources) in order to capture what information could be of relevance for careers purposes, how that data is currently produced (and therefore its potential for wider use) and how it can be analysed.
- We interviewed a small sample of 11 stakeholders to explore the business and market drivers for incorporating LMI within an online careers 'offer' and to test potential, future market developments (in terms of both LMI sources and online careers information provision). The interview sample was based around both:
 - Public sector organisations with responsibility for key LMI sources, and;
 - Organisations involved in developing various online careers products, services and tools (across the public and commercial sectors). *We aimed to capture a flavour of the quite diverse service offers and types of organisations providing online careers information, including organisations that we felt to be the key players in terms of products and services to date. It is important to note, though, that we targeted a small and indicative sample for the purposes of developing key themes rather than a comprehensive consultation with what is arguably a large and complex market.*

A list of stakeholder organisations interviewed for the study is included in Annex 1 to the report.

Parallel work, including complementary stakeholder consultation, has been undertaken by the International Centre for Guidance Studies (iCeGS)⁴. It looks more closely at the notion of a 'career support market' and how technology is re-shaping that market. The iCeGS report also includes consumer research and international case studies.

1.1.3 Next steps

The developments we look at in this report arguably have much wider implications for careers services and the very notion of the 'careers market'. We flag these as points for debate and future consideration in the report, but we do not attempt to replicate the contextual and scoping work contained within the June 2010 expert papers. Nor do we pre-judge the next phase of the UK Commission's wider project, which will:

- synthesise the various research contributions being undertaken throughout the course of the project,
- take forward the dialogue with key stakeholders,
- and consider in more detail the technical considerations and processes that lies behind many of the innovations we see (e.g. developing data apps, mash-ups etc).

1.2 Policy Context

1.2.1 Empowering individuals and communities

The rationale for investigating how technology can transform career learning lies in a wider move from government to empower individuals and communities in the context of developing

⁴ *Enhancing choice? The role of technology in the career support market* The UK Commission, December 2010

the 'Big Society' – including an over-riding ambition *'to put more power and opportunity into people's hands'*⁵.

This has specific resonance with how individuals engage with the skills and employment system (and therefore the role of IAG as part of that system). For example, the July 2010 BIS consultation on the coalition government's new skills strategy describes a skills system which puts *'informed and empowered learners and employers at the heart of a responsive and flexible skills system....that supports our vision for a "Big Society"*⁶.

The strategy consultation document also makes reference to work being led by the UK Commission to explore the potential for *'public course labelling and institutional scorecards, which empower customers and communities to drive provider responsiveness, quality and continuous improvement'*⁷. The use of such information could clearly inform an individual's career planning and wider personal development, and shows the wide-ranging scope of career learning in practice. The exploration of course labelling specifically also highlights how, in an online context, there is increasing potential to consider new forms of information (including user-generated information) as well as traditional data sources.

1.2.2 Increasing transparency

The coalition programme for government also outlines a priority of government transparency and, within this, an expectation that *'setting government data free will bring significant economic benefits by enabling businesses and non-profit organisations to build innovative applications and websites'*⁸.

This provides an important driver for creating an environment in which public data (including LMI) may be able to be used and disseminated more widely than has ever previously been possible. Progress towards opening up public data can be seen in the work of data.gov.uk, set up by the previous government as a single access point for public data. The data.gov.uk website provides an early insight into how individuals are taking a wide array of public data and developing:

- tools (e.g. apps) to enable new visual representations of that data;
- interfaces to vastly simplify the interrogation of data; and
- programmes to link data.

There has also been progress in terms of setting out protocols and expectations to ensure data is available in a standardised and easy-to-use format:

- On the 28th May 2010, the Prime Minister wrote to all Cabinet Ministers setting out a series of 'transparency commitments', including that *'government departments and agencies should ensure that any information published includes the underlying data in an open standardised format'*⁹.
- On the 30th September 2010, the government launched a new 'Open Government License' that allows anybody *'to re-use public sector information without having to pay or get permission'*¹⁰. This simplified system was heralded by experts such as Professor Nigel Shadbolt¹¹, who has said that historically, *'licence variations were a significant barrier to data publication'*¹².

⁵ Pg1, *Building the Big Society* Cabinet Office, May 2010

⁶ Pg5, *Skills for sustainable growth: Consultation on the future direction of skills policy* BIS, July 2010

⁷ The UK Commission website: <http://www.ukces.org.uk/our-work/strategy-and-performance/empowering-customers>

⁸ Pg20, *The Coalition: Our programme for Government* HM Government, May 2010

⁹ Cabinet Office website: <http://www.cabinetoffice.gov.uk/newsroom/statements/transparency/pm-letter.aspx>

¹⁰ Data.gov.uk website: <http://data.gov.uk/blog/new-open-government-license>

¹¹ Advisor for the set up of data.gov.uk, member of the Public Sector Transparency Board (set up by the Coalition Government) and Chair of the Local Data Panel (which promotes open data within local government)

¹² Data.gov.uk website: <http://data.gov.uk/blog/new-open-government-license>

These developments to promote the availability and accessibility of online public information (i.e. information supply) sit alongside the wider transformation in how people use technology as part of their day-to-day lives (i.e. information demand). This relates to the evolution in how people source information and how they undertake various social and professional interactions and exchanges. Job search and career exploration are undeniably examples of these changes – but it is important to recognise that the nature of these interactions is still evolving as a result of emergent platforms (e.g. social networking) and data applications.

While the opening up of public data is continuing and the technology to harness and transform that data is itself rapidly developing, it is clear that, in the context of the provision of careers information, there is a significant opportunity for the development of new products, services and tools to support individuals' career learning.

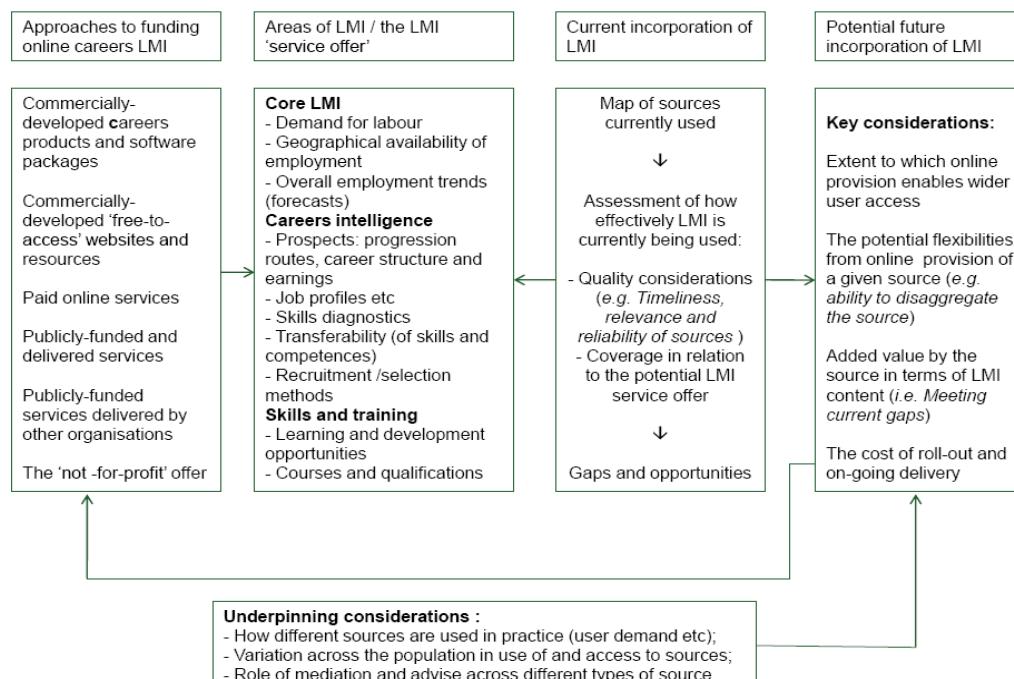
1.3 Analytical Framework and Definitional Issues

In order to understand what is driving the current provision of online LMI in a careers context and the potential for the wider application of public data, we developed an analytical framework to structure and focus our research.

The framework is presented below in Fig. 1.1 and distinguishes several elements of the picture:

- Mapping the current landscape:
 - Approaches to funding the online careers LMI offer.
 - Types of LMI currently provided by the market (the LMI 'service offer').
- Analysis of the current incorporation of LMI (appropriateness; gaps and opportunities etc) and potential future incorporation of LMI.
- Underpinning considerations that, while not the direct focus of this study, have to be considered in the context of defining priorities for action (e.g. the role of intermediaries within a careers market; variations across the user population in terms of demand for online IAG and access to services).

Figure 1.1 Analytical framework



1.3.2 Approaches to funding online careers LMI

The framework shows an over-arching typology of the various funding models that underpin the delivery of online careers products and services. In simple terms, this allows us to compare the publicly-funded and commercial markets for providing LMI in a careers context. However, that headline distinction is not always useful. We would argue that not only are there a number of different approaches within the commercial market, but that there is a continuum of funding approaches between a pure publicly-funded/delivered offer and a solely commercial offer.

Looking at these various approaches provides a useful shorthand for making sense of who pays¹³ – either directly or indirectly – for the provision of LMI in different contexts and, more importantly, how it therefore fits within a wider package of services (for example, the core activities of a recruitment business or a wider public IAG careers service offer). This provides the main focus for *Chapter 2* of the report.

1.3.3 Types of LMI

The framework also sets out what we have called the LMI ‘service offer’, which can be used for considering what *types* of LMI are supported in different contexts (and what therefore is either demanded or sustainable within the current market).

We have used a broad definition of LMI to reflect the complexity of how this information can be translated into online products and services. In doing so, we distinguish between:

- **Core LMI:** Encompassing the bedrock labour market and employment information that is rarely generated primarily for careers purposes, but which provides undoubted value in informing careers decisions (e.g. demand for labour; employment trends; vacancy information).
- **Careers intelligence:** More directly careers-related information, which is often quite qualitative in nature (compared to core LMI) and includes skills intelligence as well as information about employment practice (job/role profiles; recruitment requirements; career progression). Indirectly, it could also be argued to include various skills diagnostic tools available within the careers market, as these are presumed to be based on some form of underpinning LMI (e.g. skill requirements for employment in a given field).
- **Skills development and training:** A third element that is relevant when thinking about LMI in a careers context relates to training provision, development opportunities and qualifications. This brings into scope a much wider body of information about courses and institutions that is arguably best-considered in its own right (and is the focus of other work, such as that noted earlier on course labelling). As such, we have not focused directly on this area within our analysis except when looking at public LMI sources (*Chapter 3*) and to note that:
 - In future, it is likely that careers LMI and information about training provision will become much more integrated from a user perspective.
 - Many of the developments in terms of online provision of this information are similar to those for core LMI / careers intelligence (i.e. technology has transformed the volume and accessibility of available information; there is an interplay between public and commercial information).

Our typology of LMI here builds on the list of LMI set out in the June 2010 expert paper: *Labour market information (LMI), information communications and technologies (ICT) and information, advice and guidance (IAG): The way forward?*

Much of that list falls into the category we have defined as ‘core LMI’, but it also encompasses elements of careers intelligence:

- Core LMI:
 - ‘information on general employment trends (e.g. historical trends, future demand);

¹³ i.e. Government, employers, individuals

- ‘data on the structure of the labour market (i.e. what jobs exist, how many, which sectors, which occupations)’;
- ‘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?)’;
- Careers intelligence:
 - ‘information about the way the labour market functions (i.e. how people get into jobs and move between employers, etc.)’;
 - ‘information on progression routes (i.e. career structure, earnings, transferability of skills)’¹⁴.

The way in which these types of LMI relate to key public data sources is discussed in *Chapter 3* of the report.

1.3.4 Current and potential future incorporation of LMI in a careers context

When looking at which LMI sources are currently incorporated within online careers products and services, it is possible to make judgements about both the *quality* of LMI provided (in terms of reliability and robustness of sources) and the *coverage* of LMI in the context of the typology set out above (the LMI ‘service offer’).

This can serve to highlight where there may be gaps in terms of what is currently provided by the careers market – and, furthermore:

- whether these gaps can be defined as an opportunity/need for better incorporation of publicly-funded LMI (assuming it exists); or,
- whether they may reflect a lack of demand for particular types of LMI from careers users.

It is then possible to suggest where (*which sources; which LMI topics*) there may be opportunities for better future incorporation of LMI for careers purposes. This assessment depends on key considerations such as the frequency/timeliness of LMI ‘refresh’, the format/accessibility of the data and the potential for disaggregation.

As such, these considerations are arguably important for distinguishing between LMI that is *theoretically of use* within the careers market and that which is *practically useful* and liable to be used by the market. In the context of data format and accessibility specifically, the move at policy level towards data transparency and greater access to public LMI (including raw data) is critically important for setting the conditions for future incorporation of LMI.

1.3.5 Underpinning considerations

There are several important areas that, while not the main focus of this study, are critical to an understanding of the careers market for the provision of online LMI. This includes the role of intermediaries within the careers market and research relating to IAG users.

Given that we have focused on the availability of online LMI in a careers context (and in the context of moves to empower individuals through the provision of better information), our starting point is, by definition, information that is available for users to directly access without the need for intermediaries. The increased provision and easier availability of such information directly to users may have implications for the delivery of wider careers services (i.e. services that typically provide information, advice and guidance), but that is likely to remain a point for further debate.

¹⁴ Pg16 *Labour market information (LMI), information communications and technologies (ICT) and information, advice and guidance (IAG): The way forward?* The UK Commission, June 2010

As noted earlier, our focus here is largely on the *information* element of IAG. Yet it is also likely that technology is impacting on the provision of *advice* and *guidance* given that it offers:

- the potential for new forms of engagement,
- improved potential for and a greater need for advisory signposting to navigate the complex online landscape,
- and requires new skills and competences of careers professionals (as suggested in the *Careering through the Web* report¹⁵).

There is also complex LMI such as skills and employment forecasts that may remain best interpreted by intermediaries and can certainly benefit from being contextualised to local settings (something that the online careers market struggles to provide – for good reason). We can therefore return to some of these wider issues when considering (in *Chapter 4*) the implications of our analysis for future policy.

In *Chapter 4*, we also reflect on another area that is not the main focus of the study, but is of related interest: *how users engage with online careers products and services as part of career learning, as well as variation across the population in access to and engagement with these products and services*.

The latter, we would argue, is a key consideration when thinking about the government response in supporting the development of better careers information. It might be considered to relate to 'user demand' for careers information products and services. We have considered demand for products and services indirectly in the context of what products and services are currently sustained by the careers market (particularly the commercial career market), but the nature of demand is itself a complex question requiring further research and investigation.

¹⁵ Pg30 *Careering through the web: The potential of Web 2.0 and 3.0 technologies for career development and career support services* The UK Commission, June 2010

2 The Online Careers Information Offer

This chapter describes the various 'offers' that shape the current provision of LMI in an online careers context. It looks at the types of organisation involved in the market, says something about the size and nature of the market in different areas and describes how this provision is funded and resourced. We also include examples of online careers information provision in this context.

2.1 The Online Careers Market (or Markets)

Before looking at the various offers in more detail, it is worth saying something about the careers market¹⁶ itself. We have described this earlier in the report in singular terms, largely for the purpose of convenience. However, it is probably more appropriate to think about there being several careers markets relating to different population groups.

One could argue that there are many different markets when viewed from a user perspective – but we would suggest that this is not a helpful standpoint when trying to understand the different types of offer underpinning the provision of LMI.

What is important, though, is to distinguish between careers markets relating to:

- The provision of online products, tools and services in a schools / education setting (careers education).
- The provision of online products, tools and services in a general setting and primarily aimed at the adult market. *The next feasible disaggregation of this market would be to further distinguish careers LMI delivered through public employment services (e.g. Jobcentre Plus) to unemployed people and careers LMI for the wider population (including people in employment), but that is a debatable distinction in practice and one that is not necessary for the purposes of this report.*

The main distinction here is important to note because relevant products, tools and services within careers education tend to be mediated by teachers or embedded within learning (for example, as part of Personal, Social and Health Education). Conversely, in what we can loosely call the 'general market', the way in which online careers LMI is taken on board and interpreted is down to the individual (even though this might be as part of an interactive process).

More importantly, the careers education market is shaped by education policy, funding and statutory requirements relating to the provision of careers education for young people. While commercial organisations operate within this market, their willingness to do so is largely determined by government policy. The LMI service offer here is therefore a function of and dependent on public policy – as the customers for these products, tools and services are local authorities and schools. It is therefore reasonable to suppose that this careers market may evolve in different ways (and certainly dependent on different factors) than the wider provision of LMI in a careers setting (the general market).

It is important not to overplay this distinction – public policy also drives the general market to some extent, for example in the context of the open data and transparency agenda – but it is crucial for understanding the resourcing of particular services and the likely sustainability of particular services.

2.2 Overview of the Online LMI Offer

We found a wide range of organisations providing online careers information. These can best be understood in terms of a continuum between products, tools and services that are entirely publicly-funded and those that are commercially-funded. The LMI offer may be 'free at the point of use' or be a 'paid service' to the individual. However, it is seldom, if ever, a

¹⁶ Note that we are talking here about the online market for the provision of careers information, rather than the wider market for careers services encompassing information, advice and guidance.

paid service in the case of the provision of LMI to individuals – *as opposed to the provision of other services offered in conjunction with LMI specifically.*

Towards the commercial end of the spectrum there are a range of offers to individuals, which can be distinguished in terms of whether they are funded by:

- Individuals receiving a free product which is paid for by an employer or third party. Often, in practice, this relates to the development of 'off-the-shelf' or tailored products for the careers education market (paid for by local authorities or schools and therefore ultimately a publicly-funded resource delivered by the commercial market).
- Individuals receiving a service or product that is free to the user, but is funded through (or cross-subsidised by) employers placing vacancies or by online advertising revenue. This represents the majority of the overall commercial market in terms of the range of sites available to users.
- Individuals paying for the use of particular services.

It is striking that there is a plurality rather than a lack of commercial service providers and a diversity of 'service offers' within this. There are also different types of organisation providing commercially-funded products or services with an LMI component, including:

- Creative media companies, who generally supply web-based, multimedia careers information products (such as CASCAiD);
- Specialist career service developers (such as The Morrisby Organisation) with an online component that primarily provides career matching services and one-to-one careers advice and guidance (through question and answer facilities, online mentoring and live video streaming);
- Recruitment agencies, such as Monster and Jobsite, which provide online careers exploration as a supplementary part of their online recruitment services;
- Online forums and groups that see careers information as an inter-related component of their service offer (although not part of the core offer). This includes resources such as LinkedIn and WikiJob.

At the other end of the scale, the entirely publicly-funded offer includes major national providers such as Next Step, Connexions Direct and Jobcentre Plus. There is also a distinct offer that, while being predominantly or entirely publicly-funded, is not provided by public organisations. This includes the specific case of Sectors Skills Councils (SSCs), which are important providers of LMI in a general sense. SSCs are independent organisations, generally reliant on public funding, but which often also incorporate resource or input that goes beyond that core public funding (e.g. sector employers contributing time to develop careers-based LMI material). There are also services developed through charitable grants and by not-for-profit organisations on non-commercial terms.

Below we look at each of these various service offers in more detail.

2.3 Commercially-Developed Careers Products and Software Packages

Careers products are software packages that present rich, qualitative LMI (in the category of careers intelligence) often through the use of multimedia. These products are often characterised by a sophisticated user interface tailored to meet the needs of end users.

Providers appear to feel that the user interface is a key part of their 'unique selling point', and these products are therefore often technology-led rather than LMI-led. This is an important distinction for understanding the drivers for specific organisations to be involved in the careers information market, including the nature of in-house expertise and likely focus for product development. Where a product is technology-led (i.e. the organisation is primarily 'selling' a multimedia solution rather than an LMI product), there may be relatively less importance attached to the LMI element itself, especially in the context of an organisation's propensity to incorporate public LMI in the future.

2.3.1 The nature of the market

The market itself relates to products and software packages that are largely aimed for use in a careers education context – although some products have been or are being tailored for marketing to a non-schools audience. Those wider markets remain nascent in most cases, and, in practice, these products tend to be aimed at the 14-16 age range (although they may be developed to be appropriate for a slightly broader spectrum of ages – e.g. from age 11 years and upwards).

The products are paid for by local authorities and other public bodies to be provided free to users and, as such, the sustainability of the market for careers products is hugely dependent on wider public policy considerations. However, there are also organisations that supply products to graduates (paid for by University careers departments) and some organisations, such as Axia Interactive Media Ltd, that are marketing products for use within the adult market.

2.3.2 Types of career product

Careers products generally provide information or tools to help users to gain a greater understanding of different occupations and identify occupations that meet their skills and career values. This includes:

- **Products that provide intelligence on different occupations.** This is mainly in the form of job profiles (including duties, entry requirements, skills and knowledge and work conditions), which are enriched by the inclusion of:
 - videos of employees undertaking different jobs,
 - employee testimonies on what the job entails and what skills are required,
 - employer testimonies on the work environment, entry requirements and progression routes,
 - and wider intelligence on the sector (such as growth projections, skills shortages and gaps and sector profiles).
- These products generally incorporate commercial information (gathered directly from employers and employees) as well as publicly-available LMI (primarily based on information provided by SSCs). There are also some products which link to information on skills and training, including local area prospectuses or organisations such as UCAS.
- **Skills diagnostic tools.** These interactive tools ask the user to answer a set of questions regarding their current skills and career values¹⁷ to present a range of career options that meet the individual's stated preferences. The key feature of these products is an algorithm which classifies occupations into particular 'job families' which have similar skills requirements/role descriptions. The information used to classify occupations into 'job families' may be derived from published research on job classifications¹⁸, where the classifications themselves were established through consultation with careers advisors. Some of these products then provide qualitative information on particular job families, while others link to appropriate information (such as the Connexions Direct Job 4U Careers Database). At present there is little use of multimedia, but some organisations such as the The Morrisby Organisation are looking to incorporate this within the service offer.

¹⁷ Career values relate to the aspects of work (e.g. financial reward; taking risks; helping others) that are of particular importance to different individuals when thinking about career preferences.

¹⁸ One example was 'Build Your Own Rainbow' by Barrie Hopson and Mike Scully, 4th edition 2009

Example 1: U-Explore

U-Explore targets 14-19 year old learners, their parents and teachers. It aims to provide 'real life' information from employees and the opportunity to find information on national and local employers. An online resource, U-Explore uses virtual tours and video case studies, as well as text profiles. All content is generated from interviews with businesses and employees.



U-Explore is funded by subscriptions from schools and local authorities. It was developed to meet the need of educational institutions to incorporate employer generated information within careers education information, advice and guidance. It can be tailored to feature localised content, in the form of virtual tours and interviews with local business and employees. The cost of the product increases with the amount of localised content purchased.

2.3.3 Resources and funding

One of the key characteristics of careers products is that they tend to make some use of commercially-generated content (primarily from employers or careers experts). This content is explicitly intended to complement (or in some cases compete with) publicly-available LMI by providing a richness of detail that is arguably not otherwise available. This focus on the richness of the experience is intrinsic to the multimedia focus of much of the market (except skills diagnostic tools specifically).

Multimedia content can include videos of employees conducting their day-to-day tasks, interviews with employers and employees and virtual tours of work environments. Such content is expensive to develop and maintain, which is arguably why we found a relatively small number of specialist organisations (6-8 organisations at a rough estimate) supplying the market. There are some smaller organisations in the market place, but there is a competitive advantage for those organisations that already have an extensive bank of career information (whether it be video content or the underpinning information for a diagnostic tool) to draw from.

Most career products are supplied 'off the shelf', but purchasers also have the opportunity to request bespoke products tailored to particular geographical locations or sectors. For example, U-Explore developed a product for Hull City Council that was tailored for the city, with information on local employers and local labour markets. It also provided information on priority sectors as defined in regional and local economic strategies. We found little evidence of significant demand for such tailored products at the moment (one organisation suggested that only around 10 per cent of its sales were bespoke) and most products give information at a national level and cover a broad range of sectors.

Given that the content is expensive to develop and the market here is dependent on public sector customers, it is debateable whether the offer is transferable to the wider (general or adult) careers market we described earlier. It is not clear which organisations would fund or purchase these products in sufficient volumes to make it a viable business opportunity. Arguably, much of the added value within these products is specifically generated from being able to inspire and engage young people anyway. It is therefore also debatable whether there is sufficient demand for these products among the wider population of adult users.

Even if the LMI content is *ultimately* only likely to be funded by public organisations, these products do illustrate how technology itself (i.e. the medium) can offer new possibilities for career learning through the use of multimedia to enliven information content and engage users.

2.4 Commercially-Developed 'Free-to-Access' Websites and Resources

There is a strong commercial service offer of careers information that is free-to-access for individuals. This is largely provided by recruitment agencies, as well as online forums and user groups.

Most free-to-access services offer both core LMI and careers intelligence. This can generally be broken down into the following categories:

- Descriptive information on sectors and occupations, including basic labour market description, as well as information relating to skills and knowledge and progression opportunities.
- Occupational analysis tools (to provide more in depth analysis of careers information).

2.4.1 The nature of the market

There are a large number of organisations operating within this market place. The provision of online recruitment services is primarily based around a relatively small number of major online companies (such as Monster, Reed, Jobsite), but there are also a large number of smaller agencies specialising in particular industries such as IT or financial services. The vast majority of these are small, local companies (including sole traders) and are not relevant for our purposes because they do not tend to provide or display online LMI. They may be an important source for local LMI, but this information is not (and, we would argue, could not realistically be) presented in a systematic way via a website. The actual market of recruitment companies providing online LMI is therefore much smaller and is restricted to the major online players.

Relevant online forums are provided by a small number of large providers such as LinkedIn and WikiJob. This is also a significant (and probably growing) number of smaller organisations (and in some cases individuals) hosting forums and blogs focusing on particular careers and sectors and which enable individuals to post information on their websites. Many of these do not regard the provision of career information as a core function, but something that enhances the information they provide.

This micro industry based around individual developers is, though, highly relevant when thinking about how the wider availability of public data may be a catalyst for new and innovative products and services. One example of this, described as a 'technology demonstrator', is the Unofficial National Jobcentre Plus Mirror¹⁹, which takes vacancy data from the Jobseekers Direct website and allows users to search that data in a different way. Irrespective of the merits and potential of this particular site, it shows that where data is available, it is possible, at relatively low cost, for any individual with the requisite technology skills and an understanding of the LMI to develop new approaches and alternative solutions (that are driven by the market and identified need rather than having to be prescribed 'top down').

¹⁹ <http://home.zois.co.uk/jcpnational.html>

2.4.2 Resources, funding and range of services

Most of the services described above have been developed to improve the traffic to web sites, both to increase the value of advertising and to improve the take-up of other income generating services (such as advertising job vacancies). Given that free-to-access services are not income-generating per se, there is a varying level of information available, which is dependent on the amount of investment organisations wish to make in providing careers information.

Some organisations, such as Monster, have a relatively comprehensive service offer developed in part for commercial reasons, but also out of ambition to be something of a one-stop-shop for all areas of career exploration (rather than just vacancy searching). However, other recruitment companies have a less expansive offer, with services ranging from generic information on the processes for making career choices to more detailed information on sectors and occupations. Some organisations complement a free offer with income generating services, such as user-funded psychometric tests.

Example 2: Monster.co.uk

Monster is one of the largest online careers and recruitment resources in the UK, with a focus on connecting individuals with vacancies. It offers a variety of careers information and tools, including:

- Careers snapshots, describing the required skills and qualifications for particular roles, as well as lists of typical duties, salary data (provided by a commercial third party) and other relevant employment information
- Career benchmarking, which invites users to detail their working conditions and salary, so that others in the same role can make comparisons;
- Externally provided resources usually funded by the user, such as CV writing and interview training services, and personal image services.



Other than partner services, Monster is free at the point of use and funded through advertising and employer contributions (for hosting job adverts). Through the career benchmarking tool, Monster is making use of user-generated content to add to its career information offer.

These services also provide new information that may not be available through the existing public offer. In the context of recruitment websites, this is in part drawn from organisations' own data on job postings – volumes, geographic spread etc. The value of this LMI often lies in its timeliness (in effect, 'live' information can be provided) and the ability to provide a

relatively detailed local picture (depending on the size of the recruitment company in question). It may be argued that this kind of LMI is often particularly relevant to users, given that it enables targeted search on what types of jobs are being created in particular geographic areas over the most recent period. In fact, the relevance of this type of information to users in comparison with (or in addition to) public LMI is an obvious area of possible further investigation within the UK Commission's wider project.

These services occasionally also incorporate commercial LMI from third parties, notably in the form of pay data. This is seen as being particularly relevant to a wide cross-section of users and, significantly, it is one of the few areas of core LMI where there exists a separate, well-established market for the generation of this information on a commercial basis (often being sold as part of a service to HR professionals). This LMI may be incorporated in some form within recruitment websites on a partnership basis (in part to promote the pay data company) and as a cost to the recruitment company (which feels that it is a useful 'hook' for generating traffic to the site).

The overall commercial models are, though, consistent with incorporating relevant public LMI where it is available. We sense an interest in doing this and the major barrier in doing so to date has been the lack of availability of relevant LMI in a format that allows incorporation within standalone websites (for example, the production of national statistics in PDF format only).

2.4.3 The importance of the user interface

In many ways, the key aspect of the careers LMI provided via free-to-use sites is not so much the content itself (although that is very important), but in terms of *how* a range of LMI is presented interactively to users. It is the functionality of the user interface and the ability to easily interrogate data that defines the service itself. What we see in the context of the major recruitment companies is, in part, a more polished and bespoke version of some of the apps already being developed by individuals through portals such as data.gov.uk – noting, of course, that the recruitment companies are also typically drawing on proprietary LMI from their own job posting intelligence.

This interactive element can also provide additional careers intelligence in the form of user-generated information. This may be done through the development of specific tools. For example, Monster has a career benchmarking tool that enables individuals to see how their current role compares to others in the same sector in terms of a wide range of areas (pay, qualifications and work/life balance etc). It may also be done by providing a conduit into a wider network of individual sources, particularly in the context of Web 2.0 technology. For example WikiJob enables individuals to post queries on particular occupations that can be answered by individuals already working in the sector.

2.4.4 User-generated information

The incorporation of user-generated content within the careers LMI market offer is still developing, but it is seen as the focal point for a potential transformation in the quality and detail of (benchmarking) information available to users. The significant advantage of user-generated information over traditional LMI sources is that it can enable more current, detailed and targeted information to be gathered in a cost-effective way. There is a front-end investment in setting up the systems to gather user-generated information – and this should not be discounted – but there are already commercial examples of this investment being made as part of an improved service offer to individuals in order to drive traffic to a website.

The main risk with user-generated information relates to quality. However, the type of criteria applied to national statistics may not be appropriate here and much depends on the ability of the user to critically appraise *any* LMI source they use online. There are also minimum checks in place within tools such as Monster's career benchmarking tool. Here, the number of benchmarked respondents is clear to users to enable interpretation. The system includes a basic check to ensure that where a low number of respondents is reported, the tool will not present any benchmarked findings. It also includes a basic 'sense check' on what is inputted

by users into the system (e.g. so that an unrealistically high salary for a given role will be rejected).

It is not clear that much more could be done to safeguard the quality of the information provided and the basic utility of the site therefore ultimately depends – as much in relation to the Internet does – on the volume of contributors. User-generated LMI is therefore only a realistic proposition for online companies with a major web presence. It also depends on the tool being valuable enough to users to support a large number of contributions – i.e. there needs to be a ‘hook’ for the individual. In the case of the Monster career benchmarking tool, individuals wanting to look at specific benchmarking information enter their own data to do so.

These caveats notwithstanding, the clear value of this approach is that it potentially offers greater detail – and much more targeted / careers-relevant questions – than even the most robust national data sources. It is unclear how the potential of social networking may in future transform the presence, take-up and therefore reliability/utility of user-generated sources, but there is clearly a virtuous circle in relation to the scalability of these tools.

2.5 Paid Online Services

There is only a limited paid online ‘service offer’ for the provision of careers LMI. This refers to services paid for directly by individual users. There was a consensus view among stakeholders we interviewed that a user-funded service model for careers information (as opposed to advice and guidance) was difficult to sustain. This is because of competition with other commercial and public services (such as recruitment websites, Connexions, Next Step and university advisory services) that are available free to the user, and also because of user habits. Ultimately, it is not clear that users will pay in substantial numbers for this type of service.

However, it is important to note that while we have focused in this report on the provision of careers information, it is not uncommon for online providers of free LMI to also provide paid services that are tailored to the individual. These services have less to do with LMI *per se*, than the commercial provision of advice and guidance services. Online advice and guidance in this context might include the large market in the provision of coaching or mentoring services. These services tend to have a strong online presence, for marketing purposes at least.

It also includes the provision of paid services such as psychometric testing, where the online element of the service offer is even stronger. As noted above, these services may be provided for income generation alongside ‘free’ services. For example, My Talent Place provides free-to-access multimedia content on occupations and supplements this with a user-funded coaching and mentoring service.

Overall, these examples have little to do with the provision of LMI in itself. Their relevance in understanding the overall offer is to show how online careers products and services are fairly typically based around a single portal or site providing a number of different services (either centrally or by linking different companies). Some of these services may be core LMI or careers intelligence (free to the user) and others may be more bespoke and ‘guidance-related’ (paid online services). An online LMI product or service may itself therefore be part of a broader IAG offer in the commercial sector.

Example 3: My Talent Place

MyTalentPlace is a user-funded service aimed at “young adults.” It combines limited free information on job roles (salary information and entry requirements, along with a summary of the “good, bad and ugly” aspects) with paid career and interview coaching services. These use Skype and webcams to enable a face-to-face IAG service delivered over the internet, with prices in the range of £60-200.

Your Options for Quality Careers Advice	Career Guru service	Career Foundation Programme	Career Launch Programme	Interview Skills Coaching
				
	Tell Me More	Tell Me More	Tell Me More	Tell Me More
This plan is designed for:	Students who need immediate career advice on any topic of their choice	Students who haven't yet chosen a career	Students who know the career they want but need help making progress	Students and Professionals preparing for an important interview
Total Face 2 Face Time	30 minutes	120 minutes	120 minutes	60 minutes
Price (incl. VAT)	£60	£200	£200	£95
Career Profile: Online summary of your career options	✓	✓	✓	✓
Expert Coach: A successful business coach with senior management experience	✓	✓	✓	✓

2.6 The Publicly-Funded and Delivered Offer

In order to understand the nature of the public offer, it is important to distinguish between the large number of public organisations that provide LMI in some form via their website and those public organisations that do so specifically for career learning purposes.

The former category, which might to date include anything from central government departments to Regional Development Agencies, is important for understanding the range of public LMI that is potentially available (which we discuss in *Chapter 3*). There may be individuals who use those sites for career exploration, but we would argue that unless such sites are intended for career learning, they cannot be considered in the context of a review of the online careers market (or markets).

The main public organisations providing LMI directly for career learning purposes are national careers advisory services²⁰. From a UK-wide perspective, this would include Connexions Direct, Next Step²¹, Skills Development Scotland, Careers Wales and Careers Service Northern Ireland.

The nature of the LMI provision here generally relates to careers intelligence – e.g. the provision of job profiles and career information. Next Step and the Connexions Jobs4U websites both hold an inventory of job profiles, which can be accessed by individuals to provide information on: duties; entry requirements; skills and knowledge requirements; working hours and salary. The sector/occupational coverage of these public careers sources appears strong, with organisations such as Next Step, Careers Wales and the Careers Service Northern Ireland incorporating Sector Skills Council-generated content within their online offer. SSCs have provided LMI content annually in an agreed format as part of an ongoing project co-ordinated by Skillset.

²⁰ Note that delivery of these services locally may be contracted to non-public organisations.

²¹ On the 4th November 2010, BIS announced that a new all-age careers service combining Next Step and Connexions provision will launch in England and be fully operational by April 2012.

The majority of public information *provided in an online careers context* is available at a national level and does not enable interrogation at a regional or sub regional level (although there are non-careers sites more typically used by labour market researchers, such as NOMIS²², that do support this sort of data query). Some public sector organisations, such as local authorities and Aim Higher, have looked to meet this gap by developing more localised online information on local labour market opportunities. However, this approach is not particularly widespread.

It is important to note that if the related LMI area of skills development and training opportunities (provider information) is considered, then a much wider set of public organisations comes into scope (e.g. Skills Funding Agency; Ofsted; National Apprenticeship Service; UCAS – including via the Unistats website; local authorities – in the form of Area Prospectuses). In general, the public offer is primarily text-based and makes limited use of multimedia or technological tools, such as mash ups, to provide a more engaging front end.

2.7 The Publicly-Funded Offer Delivered by Non-Public Organisations

The category of careers LMI that is largely or ultimately publicly-funded but delivered by non-public organisations includes some fairly specific (albeit important) cases. For example, the Higher Education Careers Service Unit (HECSU) is a membership organisation largely based around public organisations, but which has a commercial arm that part-funds the charitable ambitions of the organisation. It uses income generated from advertising employment vacancies to provide careers information and commission additional research.

The Science Council is another membership organisation and is the main funder of the Future Morph website, which targets three separate age groups of young students (11-14, 14-16 and 16-19+) and aims to encourage the uptake of STEM subjects by demonstrating the career options available to suitably-qualified people. It is free to access and resourced through public funding, as well as support from employers and the Wellcome Trust.

As noted earlier, another provider of online careers LMI are the Sector Skills Councils (SSCs); which are predominantly public-funded, but not public organisations. Their careers-based LMI is also produced to varying degrees with in-kind employer contributions (provision of case studies, input into product development etc). SSCs are major providers of LMI and, while they have no explicit responsibility for IAG, many SSCs have developed some kind of online careers websites as part of their wider responsibilities to work with employers to tackle skills supply issues (skills shortages etc). Sector promotion and awareness-raising through the provision of careers information is an obvious way address employer concerns about a lack of supply of new entrants to an industry; and many SSC careers sites are one strand of a response to employer concerns in this area. As the need for sector promotion varies, so does the depth and content of SSC careers websites. Common elements include job and role profiles, career pathway information and case studies on 'working in the sector'.

Perhaps significantly, these websites do not, in most cases, prominently signpost to the core LMI being produced by the SSCs as a matter of course (and generally available on SSC websites in report form). This may suggest something about the types of LMI that are felt to be more relevant to careers users (i.e. careers intelligence rather than core LMI).

Annex 2 provides a list of the SSC careers websites. Some of these resources are relatively sophisticated, such as the SkillsActive careers site (branded as '*the number one contact for information and advice on working in the active leisure and learning sector*'²³), Cogent Careers²⁴ (which includes detailed, interactive career pathways information), Skillset Careers²⁵ (which includes advice as well as information services) and e-Skills UK's careers site²⁶ (which includes video case studies from the sector).

²² The official labour market statistics site for the ONS (www.nomisweb.co.uk)

²³ <http://www.skillsactive.com/careers/>

²⁴ <http://www.cogent-careers.com/>

²⁵ <http://www.skillset.org/careers/>

²⁶ <http://www.e-skills.com/careers>

Example 4: HECSU

The Higher Education Careers Service Unit is a registered charity. It supports the work of HE careers services by, *inter alia* conducting research into graduate employment and careers decision-making. It is primarily aimed at careers services, rather than service users. Graduate Prospects, its commercial arm, provides in depth job profiles, as well as employer profiles.

HESCU produces core LMI, primarily through its LMI Bulletins and Graduate Market Trends newsletter. In addition, HECSU occasionally produces research reports of particular use to careers advisors, such as *Graduate retention and migration in the West of England region*. HECSU LMI is often specific to particular sectors and regions.

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Example 5: Future Morph

Future Morph provides STEM-related job profiles contained within separate website sections tailored to the different age groups. Additional information is provided via a link to the Connexions Direct Jobs4U Database. It also includes a database of STEM career case studies in which employees give advice on breaking into the sector, searchable by sector and qualification level. It includes information on qualification routes and advice on choosing certain academic subject combinations at GCSE and A-Level to enable higher-level study of STEM.

future morph my future finder

Leisure & Lifestyle / Entertainment & Culture
Business & Industry / Education & Communication
Society & Development / Health / Nature

Flash at people. Learn the art of Photography.

2.8 The 'Not-for-Profit' Offer

There are also services provided by private entities operating on a not-for-profit basis, including charities and social enterprises. The most notable examples are iCould and Horseshsmouth. iCould is funded by an individual benefactor and Horseshsmouth was originally funded by a charitable trust (Edge) before becoming independent. Both these services are also heavily reliant on in-kind contributions – to develop content and also to maintain the product.

Not-for-profit organisations generally aim to provide 'added value' services that enhance the free-to-access careers information provision. iCould, for example, provides videos on individual career stories and Horseshsmouth provides online mentoring services where volunteers provide mentoring support to individuals wishing to enter a chosen career. While this places the service towards the (non professional) advice end of the IAG spectrum, rather than the provision of LMI, the model is interesting because it is based around user-generated information.

The role of not-for-profit organisations in providing online careers products and services should not be underplayed, as many provide rich information that is not available through existing services. It is likely that these services will be maintained, at least in the near future, through charitable donations and volunteer contributions.

Example 6: Horseshsmouth

Horseshsmouth is free to the user and relies wholly on user-generated content. It allows users to: register as an online mentor (setting up a publicly-accessible profile, publishing information on areas of work-related expertise, and replying to calls for help); search for a mentor (using profiles to match with relevant people or asking questions that can be answered by any mentor); and browse profiles and stories.

Work - Featured Mentors		
chromofoam Musician Brother Writer  m factor  139 View Mentor	nicolaca creative comical commercial  m factor  301 View Mentor	plan2profit happy healthy knowledgeable  m factor  136 View Mentor
MISHKINA fun compassionate amazing  m factor  62 View Mentor	eponymous121 Attentive Creative Supportive  m factor  10 View Mentor	LianneR Empathetic Calm Helpful  m factor  136 View Mentor

3 Review of Public LMI Sources for Careers Purposes

The Chapter looks at the key publicly-funded LMI sources that either *are* or *could be* incorporated within the online careers markets described in the previous section.

3.1 Identifying Potentially Relevant LMI Sources

It is important to be selective when thinking about potential sources of LMI in the context of career exploration. While there may be a high volume of LMI – using our broad categorisation – that is produced each year by publicly-funded organisations, much of that takes the form of one-off research and cannot therefore be realistically incorporated by the providers that we have looked at.

As a minimum, it should be expected that potentially relevant LMI sources are produced over time and on a regular basis. We can probably go further and suggest that sources should be produced on a reasonably frequent basis – given that so much emphasis was placed on the currency of information by the stakeholders interviewed for this study. That, though, is a point of debate: some sources produced on even a bi-annual basis may provide information about the labour market (e.g. macro data on employer behaviour regarding skills and training) that remains equally pertinent over a longer refresh cycle.

Either way, the requirement for sources to be updated regularly over a period of time means that there are relatively few public LMI sources that that could feasibly be incorporated by the online careers market. We can classify these in terms of:

- National/cross-sector sources
 - Core LMI
 - Skills development and training-related sources
- Sector-specific sources
- Sub-national sources.

Below we look at the key sources in turn.

3.2 National Sources: Core LMI Sources

3.2.1 Annual Business Inquiry (ABI)

Organisation:	Office for National Statistics (ONS)
Date & refresh timescale	Annual
Access to the source:	http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=6365
Source of information	Statistical register based on the Inter-Departmental Business Register (VAT and PAYE registrations). The ABI covers all UK employers registered for VAT and PAYE. Data for the Annual Business Inquiry is collected using 'long forms', which are sent to all businesses with an 250+ employees and to a proportion of selected businesses with fewer employees and 'short forms' which are sent to the remaining selected businesses. The response rate in 2007 was 87.5%
Unit of analysis:	Employers
Key content:	Number of enterprises Total turnover Approximate Gross Value Added (GVA) Total employment - point in time Total employment - average during the year Total employment costs Total net capital expenditure

Other information:	The ONS has produced ABI estimates for English Government Office Regions, Scotland, Wales and Northern Ireland. ²⁷
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In the context of careers information, the key information available from the ABI relates to sector size: in terms of the number of enterprises; turnover; and the numbers in employment. The ABI disaggregates this data into SIC codes at the industry level (e.g. 'Construction') and also provides an extra level of detail with sub-industry information (e.g. Demolition or Civil Engineering). It does this at the national and regional level, allowing users to gain information about the relative size of a particular industry in their own region. In relation to key background information to inform career exploration, the ABI is therefore a directly relevant and useful (reliable) source.

3.2.2 Labour Force Survey (LFS)

Organisation:	ONS
Date & refresh timescale	(Oct-Sept 2010) quarterly. Records online go back to 1998, although LFS started in 1971
Access to the source:	Web access http://www.statistics.gov.uk/statbase/Source.asp?vlnk=358&More=Y
Source of information	Sampled addresses called on five times at quarterly intervals, which yields around 15,000 responding households each quarter. The LFS has an annual response of 59,000 households and 138,000 respondents.
Unit of analysis:	Household members aged 16+ (all adults)
Key content:	<p>Questions on education and training such as:</p> <ul style="list-style-type: none"> ▪ Numbers of adults with all types of qualifications ▪ Subject areas studied ▪ Highest level of qualifications ▪ If currently attending a course ▪ If studying in FE or adult learning ▪ Whether undertaken on or off the job training recently ▪ Leisure or education classes attendance <p>Questions on employment such as:</p> <ul style="list-style-type: none"> ▪ Details of last job ▪ Duration of current job ▪ Duration of unemployment ▪ Method of obtaining job ▪ Method of seeking work ▪ Method of travel to work ▪ Part-time/full-time employment ▪ Permanent/Temporary employment ▪ Public/Private sector employment ▪ Reason for leaving last job ▪ Reason for not seeking work
Other information:	A response rate of 79% was achieved over the last year.

The Labour Force Survey provides information on the workforce which could, potentially at least, be useful for individuals. This includes information on the individuals working in particular regions or sectors (such as the highest qualification achieved, their age, gender and ethnicity, and the level of on-the-job training). It provides more detailed analysis of key labour market metrics than is available in the ABI – although the unit of analysis (individuals

²⁷ See *Annual Business Inquiry : Background Information* accessible at: <http://www.statistics.gov.uk/abi/downloads/ABI-BG-Info.pdf> for more information.

rather than employers) arguably makes it more difficult to incorporate within a career learning context.

3.2.3 Jobcentre Plus Vacancy Data

Organisation:	ONS
Date & refresh timescale	Monthly
Access to the source:	Through NOMIS
Source of information:	Jobcentre Plus Management information
Unit of analysis:	By local authority area.
Key content:	The main use of these figures is for cross-sectional analysis of vacancies, as an indication of the types of jobs currently available, e.g. by occupation or local area, rather than absolute measures of the number of vacancies or of changes in these over time.
Other information:	The data is available at a number of different geographic levels: Super Output Area, Parliamentary Constituency, Local Authority District, and Ward. Geographic coverage is for England, Scotland and Wales. Northern Ireland data is available separately from Northern Ireland Labour Market Reports. These are not whole economy figures, but only for vacancies which are notified to Jobcentre Plus.

Jobcentre Plus Vacancy Data provides information on the number of vacancies posted and the number of unfilled vacancies at Job Centre Plus. The information can enable individuals to identify the historic level of job vacancies within a sector.

The data is presented clearly: it provides the absolute figure of unfilled Jobcentre Plus vacancies; a figure of vacancies per 10,000 people; and the number of Jobseekers Allowance claimants per unfilled vacancy. All of these figures are given at the local authority, regional and national level so that the user can contextualise local vacancies in their sector of interest against regional and national vacancies. Moreover, there is the facility for comparing local authority areas without using two separate browsers/windows at both the national and regional levels.

Of course, the significant weakness with this data from a career learning perspective (and the reason why it is, at best, complementary to commercial vacancy sources) is that it only includes vacancies notified through Jobcentre Plus. These are a subset (and an unrepresentative subset) of vacancies across the economy. The data is therefore likely to be more meaningful when looking at employment activity within some industries rather than others. If this is borne in mind, though, it is possible to suggest that Jobcentre Plus vacancy data provides valuable input into an individuals' understanding of employment activity – especially at a localised level.

3.2.4 Average Weekly Earnings (AWE)

Organisation:	ONS
Date & refresh timescale	First published in June 2005 as an experimental index alongside the Average Earnings Index. From December 2009, it was no longer experimental.
Access to the source:	Free through the ONS website
Source of information:	Annual Survey of Households
Unit of analysis:	By industry SIC code
Key content:	This is a monthly measure of the average weekly earnings (AWE) per job. It also covers the average amount of bonuses and payment in arrears.
Other information:	This covers the whole UK.

Average Weekly Earnings data provides information on the earnings of individuals within particular sectors. It contains data which can be broken down into detailed SIC classifications (e.g. manufacture of food products and manufacture of textiles). The dataset

allows analyses of how much of weekly earnings are bonus payments and how much is salaried. It also allows the user to view the information over a ten-year period and thereby gain an understanding of wage stability over time.

The dataset does not break average weekly earnings down to the occupational level, which would be useful to individuals seeking employment or a change in their job. It means that, in practical terms, this source of public LMI is unlikely to supplant or compete with the salary information available (free to users) from commercial sources.

3.2.5 Working Futures

Organisation:	Warwick Institute of Employment Research (in collaboration with Cambridge Econometrics) – published by The UK Commission
Date & refresh timescale	2007-2017: This is the third refresh of the forecast. The previous release made predictions for 2004-2014. The next forecast will cover the period 2010-2020.
Access to the source:	http://www.ukces.org.uk/upload/pdf/Working%20Futures%203%20FINAL%2090220.pdf
Source of information	Incorporates sectoral employment data from the ONS, including the 2006 Annual Business Inquiry. It also takes account of the latest Labour Force Survey (for the fourth quarter 2007) as well as the 2001 Census.
Unit of analysis:	Employment projections are made by sector, occupation and region (as well as in each devolved administration).
Key content:	Details the employment prospects and skill needs of each UK industry. It analyses this spatially and by gender. It also looks at trends in productivity and output.
Other information:	It provides medium (5 year) and long term (10 year) projections in order to mitigate against economic uncertainties.

Working Futures is an employment and skills forecast that presents analysis of each sector of the UK economy with a simple table outlining sector definition, total employment in numbers, gender split, and the proportion of workers who are full time, part-time and who are self-employed. All of this information is contextualised by the UK average. Following this, analyses of future trends in productivity are set out and finally, a forecast of the supply and demand of labour over the next ten years (driven by issues such as replacing retirees and changes in the sorts of skills required).

Working Futures incorporates national data sources such as the ABI and LFS within an econometric model to identify future sector projections. Although the data sources are robust, the challenges associated with forecasting mean that the data requires interpretation. It is a good example of a source that, while providing information that may be perfectly relevant to career exploration (e.g. future growth industries), is realistically going to require some form of mediation or re-packaging before becoming meaningful in a career learning context.

3.2.6 National Employer Skills Survey (NESS)

Organisation:	UK Commission for Employment and Skills
Date & refresh timescale	Bi-annual survey which is published by The UK Commission (and previously by the Learning and Skills Council). The 2009 version published in August 2010.
Access to the source:	Available through registering on: http://nessdata.ukces.org.uk/ness/home/home.asp . An annual report is accessible here: http://www.ukces.org.uk/upload/pdf/NESS%20main%20report_1.pdf
Source of information:	Survey is based on a sample of over 79,000 companies, representative by region, Sector Skills Council sector and size of company. The survey is conducted with the most senior person at the site with responsibility for human resources.
Unit of analysis:	Workplace.

Key content:	Key areas include (i) recruitment problems, (ii) skills gaps, (iii) training practices and training expenditure. The 2009 NESS also asked employers about the skills updating needs of the workforce, the impact of the economic downturn and product market strategies.
Other information:	Coverage is England. The response rate in 2009 was 41%.

The National Employer Skills Survey (NESS) provides a good national (England) overview of the employment and skills market in each sector of the economy, particularly highlighting skills gaps and shortages as well as training practices and expenditure. Information is available at a sectoral and regional level.

As such, the NESS provides a relatively detailed picture of recruitment activity at a point-in-time – which can be compared by sector and region. Note that even with a major survey such as NESS, there are some limitations in providing robust information at regional *and* detailed industry level. This highlights the difficulty in providing reliable, comparable LMI at local levels across all sources. The UK Commission has an online data site that allows access to the data underpinning the NESS²⁸.

3.3 National Sources: Skills Development and Training-Related LMI Sources

3.3.1 Individualised Learner Record (ILR)

Organisation:	Produced by the Data Service on behalf of BIS
Date & refresh timescale	A review of the methodology used to produce the statistics in September 2009, recommended that they move to quarterly publication.
Access to the source:	Free through the Data Service website http://www.thedataservice.org.uk/statistics/sfrmar10/
Source of information:	Individualised Learner Record (ILR) data collected from Further Education (FE) providers
Unit of analysis:	By learner
Key content:	Post-16 education and skills, learner participation, outcomes and the highest level of qualification held.
Other information:	Coverage is England

The ILR contains data on participation and achievement in FE. Information is contained within a Statistical First Release published by the Data Service. It also contains destination data, but most observers agree that this data is not very robust, as many providers experience difficulties in contacting learners to gather destination data following a learning episode.

The other main challenge in a career learning context is that the ILR only provides information about publicly-funded learning, which means it is unlikely to be relevant to all users. Having said that, the ILR does provide detailed information on particular types of publicly-funded provision (such as apprenticeships).

Useful metrics within the ILR relate to participation and achievement. This can be analysed by level and funding stream (split by those under 19 years of age and those over 19). It can also be mapped geographically and by equality and diversity characteristics. FE participation and achievement rates are published at Sector Subject Area (SSA) level (e.g. Health, Public Services and Care). This information can be broken down by local area. However data is not currently available through the statistical first release at sub SSA level.

3.3.2 Higher Education Statistics Agency data

Organisation:	Higher Education Statistics Agency (HESA)
Date & refresh timescale	Depends on the type of data.

²⁸ <https://nessdata.ukces.org.uk/ness/home/home.asp>

Access to the source:	Small data requests can be met free of charge. Larger requests are priced based on complexity.
Source of information:	Each Higher Education Institution (HEI) sends HESA a return every year containing a record for each student and each member of staff. There are guides available to aid the filing of this information.
Unit of analysis:	By individual student and member of staff.
Key content:	<p>Data is available in four streams: students in HEIs; destinations of leavers from HEIs; staff in HEIs; and finance of HEIs.</p> <p>The first two streams are most relevant here. Common data requests within the first of these, students in HEIs, include: A/AS-level points; demographic information of student population (age, ethnicity, gender); and area of study.</p> <p>Under destination of leavers from HEIs, common data requests include: employer size; SIC classification of future employment; detail of further study (qualification type, location, institution etc).</p>
Other information:	This dataset covers the whole of the UK.

HESA data enables individuals to gain information on the popularity of certain courses/institutions and the destination of these learners after they have completed their degree. Where data is available that is free to the user (via the Unistats website), it is generally provided at a high level. For example, it is possible to interrogate the Unistats website to find out the percentage of people employed in 'graduate-level' jobs six months after graduation, but not the type of industry sector and occupation type that leavers enter or geographical distribution of leavers. That level of information is contained in paid-for HESA publications.

3.3.3 Framework for Excellence (FfE)

Organisation:	Commissioned by the DCSF (now DfE) and BIS with other sponsors including the SFA, Ofsted, the Local Government Association and the Association of Directors of Children's Services.
Date & refresh timescale	FfE is conceived as an annual set of surveys, the first iteration of which is expected to be published in late 2010..
Access to the source:	The publication and availability of the data is under discussion.
Source of information:	Each of the indicators is collected in a different way. For example, the provider is responsible for administering the learner view survey and there is also a telephone survey to measure learner destinations. A survey of employer views is administered centrally by the SFA. Data relating to learner success rates is drawn from the ILR.
Unit of analysis:	FE provider
Key content:	<p>The FfE sets out a set of factors which are applied to all FE providers. They are (with the relevant indicators in brackets):</p> <ul style="list-style-type: none"> ▪ Learner and qualification success (success rates) ▪ Learner views (learner views) ▪ Learner destinations (learner destinations [including a statement of volume of employment outcomes]) ▪ Responsiveness to employers (employer views, amount of training [statement of volume for information; not graded]), training quality standard) ▪ Financial health and management (financial health, financial management and control evaluation) ▪ Resource efficiency (funding per successful outcome)
Other information:	This covers England only.

The first iteration of the Framework for Excellence (FfE) is expected to be published in mid-December 2010. The aim of the FfE is to provide information that can be used by individuals to inform their choice of training institution. This information includes: learner and qualification success rates and learner destinations. The information source is user-focused and is available by institution. It is a good example of a national source explicitly developed to inform and empower individuals.

3.3.4 Universities and Colleges Admissions Service data

Organisation:	Universities and Colleges Admissions Service (UCAS)
Date & refresh timescale	Annual
Access to the source:	Through the UCAS search engine: http://www.ucas.com/students/coursesearch/
Source of information:	HEIs provide data on what courses they have available.
Unit of analysis:	Course and HEI
Key content:	The search engine enables applicants to view courses available to them sorted by institution and region, if required.
Other information:	This is relevant to England and Wales.

This data source allows the user to search a comprehensive list of HE options by course or institution. It also allows the user to sort this data by region. There is also a means of searching for courses which lead to professional accreditation. All of these search fields can be used simultaneously.

3.3.5 Area Prospectuses on FE courses

Organisation:	As laid out in the 14-19 Implementation Plan, which was produced by the then DCSF, local authorities along with local LSC offices (now the Skills Funding Agency) were tasked with setting out in full, the FE provision available in their local area.
Date & refresh timescale	It is up to local authorities to keep the prospectuses up to date.
Access to the source:	This website http://www.futures4me.co.uk/(X(77d93f89-ae78-4093-8032-f07a70a828ac))/ChangeArea.aspx outlines links to each local authority's search engine.
Source of information:	Course information from local training providers
Unit of analysis:	Courses or provider
Key content:	The courses that each school, college and FE provider in the area offers.
Other information:	This is an England-only resource

The area prospectuses enable individuals to find course details on FE learning opportunities within a certain area. Searches can be conducted by postcode or provider. Going beyond the core functions, some local authorities provide a range of extra resources such as careers diagnostic tools, information on qualifications such as apprenticeships and Diplomas, and links to careers information sites such as Connexions, Aim Higher and the National Apprenticeship service.

3.4 Sub-national Sources

3.4.1 Sector LMI Sources

The main publicly-funded additional sources of sector-level LMI are the Sector Skills Councils (SSCs). Each SSC approaches the development and dissemination of LMI slightly differently; but there are standard elements, which relate to the Common LMI Framework agreed with the UK Commission²⁹. SSCs are required to use national data sources wherever feasible to underpin their analysis. This provides for basic comparability across sectors. Additional primary research undertaken by SSCs can therefore focus on developing a more detailed LMI picture and filling in any gaps in the existing national picture. The framework tasks all SSCs to:

- Collect and collate up to date LMI from robust, recognised secondary data sources.
- Collect LMI covering the whole of their sector as defined using formally agreed 'footprint' definitions based on Standard Industrial Classification (SIC) codes.

²⁹ *Information to Intelligence – A Common LMI Framework for Sector Skills Councils* The UK Commission, 2009

- Disaggregate LMI by sub-sector as appropriate.
- Collect and collate comprehensive data on their sector that covers the whole of the UK.
- Benchmark sector data against UK averages.
- Break down data to allow comparisons between the four UK nations and also between regions where possible.
- Fill any key information gaps on their sector (for example addressing any major gaps in knowledge on skills needs in terms of geography or sub-sector) by doing their own original primary research.
- Carry primary qualitative research and consultation with employers in their sectors to supplement hard, quantitative information. This will add further insight and detail to analyses, and enable SSCs to capture richer, more complex information.
- Carry out all primary research to a high technical standard, following ethical principals.

All SSCs therefore report on key workforce characteristics – the age, gender and ethnicity breakdown of the sector workforce. They also report on the total number of employees in the sector, the number of workplaces, and, most SSCs show the proportion of workplaces by size (e.g. proportion with fewer than 10 employees). Some SSCs also report on how long people employed in the sector had been working for their current employer, and retention and recruitment rates. There is therefore a fairly comprehensive and broadly comparable picture (because it often draws on the same primary sources) of basic labour market characteristics provided across all sectors.

The way that SSCs compare regions and industries within their sector varies. Some SSCs produce individual reports for each region and nation, whereas others simply include a comparison within an over-arching report. Some reports also include sub-regional information for certain data sets. Relatively few SSCs produce individual reports for each individual industry in their sector (those that do include Improve and Cogent), but most have industry specific information within their reports. The majority of SSCs include some form of forecast about the future state of the market. These tended to focus on the future size of the sector, which industries are likely to grow and decline, the future skills needs of the sector and the number of additional employees likely to be needed. Some SSCs also produce this information at a regional level.

It may be interesting to note that much of this core LMI, while presented on SSC websites in the form of research reports, is not always integrated into their specific careers sites. This probably says more about the type of careers LMI that is felt to be relevant to users than it does about a possible omission on the part of SSCs. It is worth noting that the National Guidance Research Forum previously developed a portal aimed at careers advisers, called LMI Future Trends³⁰, which brought together SSC data and analysis/intelligence relating to core LMI areas (employment levels; occupational breakdowns; future trends; sector summaries etc).

3.4.2 Geographical LMI Sources

At the regional level, there are observatories that have in the past provided research to the Regional Development Agencies (RDAs) on a range of issues, including: employment levels in the region and the skills gaps within particular industries in the region. This was primarily used by RDAs to inform policy and funding decisions, as well as their Regional Economic Strategies. In the context of the reform of regional and local bodies, it is unclear what type of LMI will be available in the future – but much of what regional bodies regularly provided was analysis of national data, contextualised to the local area. As such, it is not clear that there will be an additional gap in LMI availability.

To date, there has been a range of tangentially useful analysis presented for individual users. Using the Advantage West Midlands RDA as an example, its website presents graphs and data of LMI such as: Jobseekers Allowance rates (at the local authority and ward level); employment rates; trends in unemployment; economic inactivity; and the levels of JSA

³⁰ <http://www.guidance-research.org/future-trends>

claims by young people. The West Midlands Observatory would analyse and present the relevant information for the region. As a result, where it is available, data has been presented to the lowest level of detail i.e. ward level. The observatories often presented key metrics, such as skill levels, occupational level, and sector employment rates on maps which may be more accessible to users than datasets.

3.5 Current Gaps and the Potential Future Incorporation of LMI

3.5.1 Accessibility of public data

Looking at how public data is being made available to individuals (and bearing in mind the limitations on what information can be provided), we find:

- There is a wide range of core LMI information available from a relatively small number of national sources.
- There is also an abundance of online information available on skills development opportunities.
- Nearly all of the public data produced is available in some format online and free of charge to individuals. Much of it is not yet realistically accessible to individuals, though, because it comes in report format.
- In many instances LMI is not presented in a way that enables data interrogation or bespoke analysis by individuals. This prevents individuals from, for example, comparing the information for two different sectors or developing specific queries that enable them to gather data on a particular sector in a particular sub region.
- There are general limitations on the extent to which even the largest sources can be disaggregated to local level. This reflects the reality of LMI gathering through national surveys.
- While there is a wide range of regional/bespoke data produced, in many instances this is difficult to locate and is also of variable quality.

3.5.2 Future developments

As noted in our introduction, there are significant developments taking place on the presentation of public LMI, under the auspices of data.gov.uk, to make public data more transparent and accessible to individuals. These include:

- The Office for National Statistics (ONS) is re-developing its website to include a data explorer function that enables individuals to search and query ONS data sources. This encompasses not just the LFS and AWE, but also the surveys behind those data sets (the Annual Population Survey and the annual Survey of Hours and Earnings). The online applications will also enable data to be filtered so that it only provides robust and anonymised data.
- The new ONS website will also have an Application Programme Interface (API), which is a software programme that enables ONS data to be used by other software. This will enable other organisations to incorporate and mash-up ONS data on their own websites.
- BIS is also developing a website which has a data explorer and API to enable data to be interrogated and transported into other applications. Both the BIS and ONS website developments are expected to be completed in 2011.
- BIS has also been working alongside DWP and HMRC to match data sources. This may enable learning and skills data to be matched with employment information and information relating to outcomes such as future earnings and the sustainability of employment, to provide a more robust picture on the impact of various employment and skills interventions (e.g. a training course; a programme of support).

3.5.3 An international model that could inform future development

When thinking about possible future developments, it is informative to look briefly at developments in the USA, which have led to the introduction of a publicly-funded careers LMI site (called O*NET). The O*NET model provides a counterpoint to the LMI service offers

described in this report and shows the potential of a more centralised approach to online LMI provision³¹.

O*NET is the primary source of occupational information and is funded by the US Department of Labor/Employment and Training Administration. It provides standardised web based information on occupations and the labour market. The service was originally developed to provide a central resource for career counsellors to access LMI, but the user base has broadened to include individual users, as well as national and state policy makers.

O*NET provides information across a wide range of indicators, which are available at an occupational rather than state level. Key information includes:

- Overview of key tasks and work activities.
- The tools and technology used.
- Knowledge and skills.
- Entry requirements.
- Wage and employment trends, as well as average education level.
- Labour forecasts, including identifying occupations that are expecting significant growth.

The information is largely available at a national level, but it is possible to obtain LMI on wage and labour forecasts at state level (although not at sub-state level). Information is presented on the website and a CD version is also available. In addition, data is also available to be downloaded and used by other organisations

The O*NET system enables extensive disaggregation of data, providing information on over 1,000 occupations (categorised by SOC codes). In particular, the service provides detailed information on emerging green occupations.

O*NET draws on data from the large-scale Occupational Employment Statistics (OES) survey. The 2010 IER report for the UK Commission on lessons from US approaches to anticipating labour market change compares the OES with key UK occupational and employer surveys, emphasising *'that its large sample (1.2 million establishments over a 3 year cycle) allows a much more detailed analysis of occupational employment by industry than is ever likely to be achieved using the LFS'*³². Furthermore, if the main national employer survey in England (NESS) was to provide a pro rata equivalent sample size to the OES, the IER report states that it would *'need to have a sample size of around a quarter of a million'* (rather than the current 79,000 establishments).

Interestingly, the O*NET system not only analyses and presents existing national data, it also conducts much of its own primary research. Most of the organisation's annual budget (circa \$5 million³³) is spent conducting research to develop its largely qualitative job intelligence. This is through three routes:

- Occupational incumbents (through selecting businesses then randomly selecting employees to interview)
- Occupational experts (individuals with a detailed knowledge of particular occupations and sectors)
- Occupational analysts (such as occupational psychologists).

The original take up of the service was slow, particularly as US law prevented Government funded organisations from directly marketing products. However there has been a significant increase in use in recent years, primarily through word of mouth, and over the last 8 years there have been over 82,400 downloads of O*NET data, 549,500 downloads of career exploration tools and over 52 million visitors have entered the site.

³¹ We focus on O*NET because it is arguably the most comprehensive and systematic non-UK approach to presenting online careers LMI. A wider range of international comparisons are discussed in the iCeGS report, *Enhancing Choice? The Role of Technology in the Career Support Market* (November 2010).

³² Pg17, *Lessons from America: A research and policy briefing* The UK Commission, November 2010

³³ This is in addition to costs, reported by IER, of c\$35 million per year for the OES and \$6 million to undertake projections that are similar in scope to Working Futures in the UK.

The key strength of the O*NET service is the way it brings together national LMI with more detailed qualitative information on particular occupations, which is then made publicly available. However, the O*NET system makes less use of multimedia than many of the commercial organisations operating in the UK and may be less engaging for individuals than intermediaries.

4 Conclusions and Areas for Further Investigation

4.1 Conclusions

4.1.1 Current LMI coverage and gaps

There is a rich mix of LMI currently available online for careers purposes. Admittedly, the quality and coverage of this LMI varies – but that is, to some extent, inevitable and there are few obvious major gaps.

In summary:

- Information on general employment trends is provided by the Labour Force Survey. It also provides information about key workforce and labour market characteristics (including equality and diversity measures).
- Information on future demand for employment is provided qualitatively by Sector Skills Councils (drivers for demand) and quantitatively via forecasts, such as Working Futures.
- Information on the interaction between labour demand and supply is available from a range of sources, including: national statistics (employment and unemployment); vacancy data produced by Jobcentre Plus and by commercial recruitment companies; the National Employer Skills Survey (data on skills gaps and shortages); and in the analysis and intelligence produced by Sector Skills Councils.
- Information on earnings is available both via commercial pay data companies and through national statistics (Average Weekly Earnings are captured within the Annual Survey of Households).
- Information on employment practices is widespread and a component within many of the service offers throughout the public-commercial continuum. The most systematic presentation of this type of material is in the form of job/role profiles and associated career requirement information. This is available from Sector Skills Councils and co-ordinated on the Next Step website. Information relating to career progression is also produced relatively systematically by Sector Skills Councils, although similar material appears throughout the commercial LMI offer.

There are limitations (rather than gaps) in terms of the extent to which major national sources, in particular the LFS and NESS, can disaggregate to specific industries and occupations. There are similar or equivalent surveys elsewhere that enable deeper analysis (e.g. the US Occupational Employment Statistics³⁴ – OES – survey being the notable example), but these are much more expensive to undertake. Given the areas of LMI that these sources provide, it is not necessarily a major issue from a careers user perspective anyway³⁵.

To the extent that there is a gap here, it relates to the ability to capture local labour market variations. An OES-type methodology would address this to some degree. However, if the main need in relation to local LMI relates to understanding local demand for labour, any greater investment in public data in the form of national surveys would need to add value alongside the detailed and increasingly ‘real time’ information provided by key players in the commercial market (e.g. major recruitment companies).

4.1.2 LMI currently used by the online careers market

Reflecting on our notion of an LMI ‘service offer’, it is clear that the vast majority of LMI specifically within a careers setting (rather than in other online environments) falls into the category of careers intelligence rather than core LMI.

³⁴ The US national employer survey looking at employment patterns and wages, which covers 1.2 million establishments over a three-year cycle and is based around 840 detailed occupations (within 461 broad occupational areas, which in turn relate to 23 major and 97 minor occupational groups)

³⁵ Although as we note below, this may be a question for further research

That is perhaps not particularly surprising, but it is important to note in the context of careers intelligence that:

- There are a large number of role profiles available in various formats (both in terms of numbers of roles and numbers of sites providing information about roles). These profiles can provide a clear approach to clustering a range of information about jobs – such as qualification and skills requirements, progression routes and salary information. There is arguably a degree of proliferation in terms of this material, but given its relevance for career learning, that is not necessarily a major problem. The most comprehensive information in this area is publicly-funded.
- There is good, high-quality information available on career pathways in most industries. This information can be helpful in informing new entrants and career development for people in-work. The most detailed information here largely resides with SSCs. Its use and accessibility is therefore dependent on and limited by the extent to which people access those particular sites (this is likely to vary by sector).
- Much of the basic careers intelligence information can be enriched by more qualitative and detailed material. Case studies are widely available and may focus: on a specific job role; at the level of a job role within a particular organisation; on the 'story' of an individual undertaking a job role. They aim to provide an engaging 'taste' of an industry or job rather than detailed LMI. The careers education market has been a key driver for the development of this sometimes expensive content. Case studies are also developed by the likes of Sector Skills Councils and commercial recruitment companies; although in the case of the latter, they are typically targeted only at professional occupations.

The key challenge for policy is whether all of this useful careers intelligence material is easily accessible. That is probably not always the case – given that much of the most useful (detailed) LMI is to be found on specialist sites. However, it should be noted that in both the public and commercial spheres, there are sites and portals that bring together information and link to a wide range of sources (e.g. Next Step; Monster; various Sector Skills Council websites).

4.1.3 Challenges in and prospects for achieving the wider use of core LMI

We would suggest that there are two reasons why core LMI is much less prominent within online careers information services:

- It may be less relevant to a significant proportion of users undertaking career exploration – where it functions more as background to the detailed qualitative intelligence that the current market suggests is far more important.
- Until recently, much of this LMI has not been available in way that is accessible either to users directly or to online providers to incorporate and present.

While this information may be assumed to be less relevant – *and note that this remains an assumption rather than something about which there is firm evidence in the context of a developing market* – this is not to say that there is no demand for its inclusion on the part of careers information providers themselves. The nature of both the online market and most online career providers (of sufficient size, at least) is that the web 'offer' is improved by having additional, complementary information – if it is felt to be relevant.

Assuming that this information can be incorporated within existing site structures and remains meaningful, it is likely that it will be picked up by the commercial market at some point. How and when this will happen cannot be determined for sure. There may be a role for government to facilitate the take-up of core LMI, but that, in itself, is unlikely to make a substantive difference to the outcome.

There are also two important scenarios to consider in this context:

- It may be that by making core LMI publicly available for developers, an innovative solution or application will be developed by an individual or small organisation not currently active in the online careers market, which can then be incorporated or mainstreamed by a large-scale online careers provider (in the commercial or public

sector). It is too early to make a firm judgement about the likelihood of a 'micro innovation' transforming the use of core LMI, but it is a reasonable expectation that there will be interesting new developments over time given the way in which the wider online community has responded to open data already provided in other contexts.

- Putting the data 'out there' is clearly the major step towards facilitating its better use. However, a range of stakeholders emphasised the remaining challenge in incorporating some major national sources (such as the Labour Force Survey or Annual Business Inquiry) because there is no standardised way in which the commercial market, in particular, defines areas of employment (e.g. sectors). This can make the read across from the SIC and SOC coding within national public data difficult to achieve. Even though SIC and SOC do provide a standardised format for LMI, that format does not – *and we would contend is unlikely to ever* – provide classifications that fits the way the commercial market wants to present this information. That is a real problem – albeit not one that is a fundamental barrier to the incorporation of core LMI. A 'best fit' approach is required. It is possible to manually define industries by combining detailed (four digit SIC) classifications using tools that are available to researchers. While this enables the analysis of raw LFS data, it is not appropriate for inclusion within careers websites on an ongoing basis. This is largely because it requires the user to extract new data using a manual query each time the source is refreshed. It remains to be seen whether the ONS's new data explorer function will, alongside the Application Programme Interface, allow this kind of flexibility to careers information providers.

4.1.4 Gaps in the market and priorities for action

In terms of gaps in the current availability (or potential availability) of core LMI, national sources provide a reasonable cross-section of information that *could* be used for careers purposes (noting the scenarios above). There is also little other information that can realistically be added in a comprehensive fashion. This is partly a question of cost, but also reflects that any gaps that exist are largely at the margins, or where it is just practically very difficult or expensive to get detailed, consistent information (e.g. drilling down to local LMI).

This supports the rationale for making better use of the LMI that is already generated. 'Better use' in this context effectively means: *more widely available in a more adaptable format* (interrogating the raw data). As the work of data.gov.uk and others is already tackling this very question, it is reasonable to suggest that policy is progressing along the right lines.

It could be argued that while relevant LMI is being produced across most topic areas, the fact that it is produced by different organisations and appears on different websites makes it less-accessible to users. From that perspective, it may be attractive to build a single portal to streamline and co-ordinate public LMI gathering and dissemination. This approach would constitute something akin to the O*NET model in the USA.

Our review of the current landscape does, though, highlight several considerations for policy makers with regard to this type of approach:

- It should be clear and explicit what the anticipated audience for an O*NET-type portal would be. O*NET is more explicitly targeted at careers intermediaries, researchers and policy makers and it is debatable whether the approach is attractive to a broad cross-section of individual users. In particular, there is an apparent trade-off between breadth and depth of coverage. While a single portal may be highly effective in providing comprehensive labour market background and context³⁶, it is debatable whether it can realistically provide the detailed careers intelligence that users may be looking for.
- The ability to provide detailed content is a function of available resources. There would be a significant cost in developing such a portal, but the more important consideration from a public policy perspective relates to the likely ongoing cost for maintaining such a site. This may be considerable if a portal requires a detailed specification of content in order to attract users. This can, to some extent, be offset by reducing existing costs relating to the public provision of LMI; but solely from an organisation and co-ordination

³⁶ Assuming associated investment in national surveys.

perspective, there are also likely to be 'new' costs associated with the need to produce consistent and comprehensive data across existing sources and through the top-down co-ordination of many LMI producers.

- It is also worth considering whether such an approach can actually fill a gap or whether it may be seeking to replicate (in part) approaches being delivered by the commercial market. We sense a proliferation rather than a lack of current sources. To reiterate: *there is a lot 'out there'*. Significantly, this includes examples of the market responding to provide user-friendly, meaningful and relevant information.

4.1.5 Prospects for the future online LMI careers market

The direction of travel is such that the provision of careers LMI is unlikely to dissipate – and will instead be improved and refined over time. The fundamentals of the market and the viability of the various commercially-funded offers are relatively secure. The breadth of organisations providing online careers information is:

- partly due to user behaviour, with an increasing number of individuals accessing online resources for information, thereby increasing demand;
- and partly due to the efficiencies that the Internet provides (where production costs are kept low and products can be updated centrally), which makes it easier to sustain a presence in the market.

The exception to this may be those products provided as part of the distinct careers education market, which are beholden to public policy and the purchasing constraints of particular public organisations (notably local authorities and schools). Some of the providers within this market argue that their products have a more commercial application anyway – although this remains to be seen. Either way, these types of product may best be categorised as *additional to* rather than *an essential part of* the online career LMI landscape. Whether they are sustained by the online careers market is therefore arguably not significant when thinking about future gaps in the provision of LMI.

One of the great unknowns in terms of the future landscape is what the impact of increased availability of user-generated information will be on the overall provision of online LMI. The most likely and benign outcome, in the short- to medium-term at least, is that it simply adds to the richness of the current offer – and becomes another avenue for career exploration.

In a career learning context, the user-generated market is still so nascent that it is not even clear that its impact will be significant (although it would be naive to discount this prospect). It is also arguable that much of the user-generated information likely to come on stream is complementary to traditional LMI – forming, as it does, sites and networks to gather and share careers information. In a broader IAG-context, these approaches are much more similar to provision of advice and guidance than LMI per se. User-generated career benchmarking tools fit more squarely in the information category and do raise questions about the quality assurance of online careers LMI. We consider this issue below in the context of a discussion of the government role.

Overall, it is important to note that while there is a healthy market in the online provision of career LMI, it does depend to a significant extent on the continuing production of publicly-funded LMI. To suggest that there are no obvious gaps in the current LMI service offer that could be practicably filled by additional publicly-funded LMI³⁷, is not the same as saying that the current public LMI offer is in any way unnecessary. While the commercial market does lead in terms of the dissemination of careers LMI, it relates and refers to public data and publicly-funded careers intelligence to a significant degree. That LMI provides a bedrock for online users, which may not always meet the audience it deserves, but is an important component to the online careers LMI landscape.

³⁷ As opposed to the better use of currently-available LMI

4.1.6 The role of government

There are various options open to government in relation to the ambition of empowering individuals through the better availability of high-quality LMI in a careers context:

- 1. *Taking no action (beyond ensuring open data):* Ensuring open data is a pre-requisite for any future transformation of the availability of LMI, although taken in isolation it is likely to mean that the market remains somewhat unbalanced (i.e. the information will be there, but not necessarily in places that mean most people get what they need – or if they do, it will owe something to chance). It is, though, absolutely crucial that government continues its drive to ensure that data, including LMI, is made publicly-accessible in a format that enables its wider use.
- 2. *Developing a central portal for careers LMI:* This option would be to develop something akin to the O*NET model in the USA. As we have already intimated, this is likely to be expensive and it is not yet clear that it will achieve ambitions related to empowering individuals (the information will not be detailed enough). It is debatable whether such an approach will have traction with users. There is also a risk that it replicates parts of the current market and is likely to produce a portal that holds the background information for career exploration (core LMI) rather than the careers intelligence.
- 3. *Providing development support for new ideas that might be sustained by the market:* There are upfront costs to the development of new products, tools and services for presenting online careers LMI. However, this is only arguably a significant factor where the LMI offer involves the generation of a lot additional primary content. It is difficult to see where this might be necessary. Conversely, by ensuring that public LMI is available and free to use, it is likely that solutions will emerge in any case. There may be exceptions to this, but, on balance, there are probably better ways to support the development of new products and services than by providing resource for initial development – see below.
- 4. *Providing a broader facilitative role in the context of the online careers market:* There does appear to be a valuable role for government in *facilitating* the better use of LMI in an online careers context. We suggest serious consideration of all of the following, none of which needs to be resource-intensive in nature:
 - a) Consider running a government-sponsored competition aimed at small-scale developers to produce the most useful or innovative application of public LMI for careers purposes.
 - b) Consider ways in which national online careers providers (Next Step and Connexions; as well as direct.gov.uk) can signpost to useful resources available free to users.
 - c) Consider introducing an award or kite mark for online careers LMI providers to recognise LMI that is included is of sufficient quality and adds value to users.

The bullet above (Point C.) relates to a key question on the broader government role in the context of the online market: *Should government be concerned about the quality assurance of LMI produced by the market?* We would suggest that it is not practicable for government to attempt to address this issue in terms of managing or controlling the supply of LMI. We would also suggest that while government can help to signpost towards better-quality and more useful LMI sources, the fact that there may be non-independent or less robust information that is accessed by users for career learning purposes is not necessarily the central issue from a public policy perspective.

The more fundamental question is whether *users have the right skills to critically appraise the quality and veracity of LMI they encounter through job search?* We might draw two conclusions to inform discussion around this more fundamental question:

- Users already have to critically appraise careers information in the Internet age in a way that cannot be independently verified or quality assured. Through Internet search, most users are looking at a variety of sources and types of information – especially company information / websites relating to specific employers. This level of detailed, company-

specific information is clearly 'partial' and includes a marketing element ('join us'). Yet few people suggest that it needs to be quality assured. This is important because careers information of this sort is arguably sometimes the most important information for individuals who have identified a potential employer or key employers within a potential industry.

- The ability of users to critically appraise the careers information they receive online depends on them having the requisite Internet search skills or information and analysis skills. That is clearly an important public policy consideration with regard to education policy. It goes well beyond the scope of this study, but it helps to show where the potential role of government is much clearer. It may, in effect, be about equipping people to critically appraise information, rather than attempting to control the information supply or aim for an unrealistic notion of 'independent' information.

On a related point, that has been noted in previous research, government clearly also has a wider role with regard to those people who cannot or will not access online information for whatever reason. This is arguably a diminishing group, but it remains significant. This is also where the market failure is in terms of the availability of careers information, rather than in terms of the provision of particular types of LMI, and where there is much clearer logic for substantial public intervention.

4.2 Areas for Further Investigation

There are a number of areas that would benefit from further investigation in the context of the wider project (or beyond). We would suggest consideration of the following:

- Up-to-date research on how a sample of individuals (in different contexts) engage in a process of career exploration, primarily to understand how multiple online resources are used for different purposes as part of a single process.
- In particular, it would be useful to test the thesis that the vast majority of users only use core LMI (not including salary information) for background purposes and, if this is the case, what the means in terms of the reality of career exploration. Are there particular groups of users for whom core LMI is of greater importance and can these groups therefore be targeted?
- Further exploration of the technical possibilities and pitfalls associated with the innovative use of online technology. We understand that work to this effect is already in train and suggest that it would be particularly useful for developing an understanding of the following:
 - Motivation on the part of developers.
 - More detailed discussion on the potential of technology given what is known about the online market and available data.
- Close engagement with data.gov.uk and ONS to understand and support plans for ensuring that public LMI is made available in a format that facilitates its wider incorporation.

Annex 1: List of Stakeholder Interview Organisations

Broad typology	Organisation	Service offer
Public providers of Labour Market Information	The Office for National Statistics	Provider of national statistics, including the Annual Business Inquiry, Labour Force Survey, Average Weekly Earnings, Claimant Count and unemployment data.
	The Information Authority	Setting data standards and governing data collection for Further Education and training provision.
	The Sector Skills Alliance	Sector-specific data; both primary research conducted by employers and analysis of public data sources.
	BIS FE and Skills Investment Team	Responsible for matching FE, Schools, DWP and HMRC datasets.
	O*Net	Online data platform developed in the US to bring together and present LMI.
Career product developers and service providers	U-Explore	Provides career information using multimedia, 360 degree workplace tours, job profiles.
	Axia Interactive Media	Provides a range of web-based lifelong learning tools and services (information, advice and guidance). This includes providing job matching services, based on skills and values assessments.
	The Morrisby Organisation	Organisation specialises in the fields of educational choice and career guidance. Producers of psychometric tests. Products include Fast Tomato, Prefinio, and Morrisby Guidance Services.
	HECSU	Provides research and analysis on graduate progression, sector profiles, job and postgraduate study opportunities via its trading arm (Graduate Prospects Limited).
	Monster	Online recruitment company, providing job opportunities, career benchmarking tools, career snapshots.
Advisory bodies	Edge	Advocate for vocational learning. Funded Skills Commission enquiry into IAG and involved in preliminary research on the potential of user-generated information for supporting decision-making related to learning opportunities.

Annex 2: Sector Skills Council Careers Websites

SSC	Website links
Asset Skills	http://www.assetskills.org/CareersandTraining/CareersHome.aspx
Cogent	http://www.cogent-careers.com/
Construction Skills	http://www.cskills.org/workinconstr/index.aspx
Creative and Cultural Skills	http://www.creative-choices.co.uk/
Energy and Utility Skills	http://www.euskills.co.uk/careers/
e-skills UK	http://www.e-skills.com/careers http://www.bigambition.co.uk/
Financial Services Skills Council	http://www.fssc.org.uk/careers.html
GoSkills	http://www.careersinpassengertransport.org/
Improve	http://www.improve-skills.co.uk/careers
Institute for the Motor Institute (IMI)	http://www.motor.org.uk/careers/index.html
Lantra	http://www.lantra.co.uk/Careers/Career-Finder.aspx
People 1 st	http://www.uksp.co.uk/
Proskills	http://www.proskills.co.uk/careers http://www.prospect4u.co.uk/
Semta	http://www.semta.org.uk/careers__qualifications.aspx
Skills for Care and Development	http://www.skillsforcare.org.uk/entry_to_social_care/entry_to_social_care.aspx
SkillsActive	http://www.skillsactive.com/careers/
Skills for Health	<i>Employer-focused site:</i> http://www.skillsforhealth.org.uk/Home/developing-your-organisations-talent/careers-information-and-advice.aspx
Skills for Justice	http://www.skillsforjustice.com/careers.asp?pageid=160
Skills for Logistics	http://www.deliveringyourfuture.co.uk/
Skillset	http://www.skillset.org/careers/
Skillsmart Retail	http://www.skillsmartretail.com/SR/Careers/Home/default.aspx
Summit Skills	http://www.summitskills.org.uk/careers/23 http://www.goodday.org.uk/Careers/7