



Get yourself connected

Conceptualising the role of digital technologies in
Norwegian career guidance

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Executive summary

This report outlines the role of digital technologies in the provision of career guidance. It was commissioned by the committee on career guidance which is advising the Norwegian Government following a review of the countries skills system by the OECD. In this report we argue that career guidance and online career guidance in particular can support the development of Norway's skills system to help meet the economic challenges that it faces.

This report synthesises existing research and practice relating to online and digital technologies in career guidance. In addition, nine case studies are detailed which provide insights into how other countries are using digital technologies in career guidance.

Technological changes impact the way in which learning and work are organised. These changes have implications for all citizens requiring new skills to enable their full participation in society and their career development. In particular the recent changes brought about by both globalisation and the development and diffusion of web and mobile technologies have profound implications across all areas of culture and society.

Citizens must adapt new technologies into their daily lives. Within these new technologies there is a particular sub-set of digital skills essential to successful participation in both learning and work. These digital skills are defined as digital career literacies and are a specialised set of career competencies necessary to navigate new digital landscapes. As Norway develops a framework for career competencies digital career literacy should be considered as part of this framework.

New technologies offer major opportunities for the delivery of career guidance. The research evidence for effective online services does set out the roles that online services can take. Online and digital career guidance can provide:

1. a range of learning and career information which support career building. Such information may take a variety of forms including text, images and multi-media content;
2. various kinds of automated interaction including career assessments, simulations and games; and
3. a range forms of communication allowing citizens to connect with career professionals and other career informants. This includes one-to-one, one-to-many or many-to-one and many-to-many forms of communication.

Most thinking about the use of digital technologies has focused on the provision of web-based services. However, as the penetration of mobile technologies increases this opens up new possibilities for the development of innovative careers services. For example, both public sector careers providers and private providers are now creating mCareers apps to deliver careers services across a wide range of devices and making it accessible to an ever growing number of people.

There is a danger that discussion about the use of new technologies in career guidance can become polarised between online and face-to-face services. Yet, everyday life is situated in an increasingly blended environment. Many daily activities include consulting the internet through peripatetic devices. Online and onsite careers services need to recognise this blended reality. Furthermore, the evidence relating to both e-learning and online career guidance suggests that blended provision, which combines both face-to-face and online, is both effective and supports wide access to provision. A series of different models are proposed for different kinds of blended delivery (rotation, flex, self-blend and enriched-virtual).

The report concludes by exploring the implications of these changes at the policy level. Four main areas for public policy to prioritise are proposed. Public policy should:

1. build the digital career literacy of the population;
2. stimulate the development of the online market in careers provision;
3. quality assure the online market in careers provision; and
4. compensate for market failure.

From these roles a series of public policy actions are proposed as follows.

Build the digital career literacy	Stimulate the online market in careers provision	Quality assure the online market in careers provision	Compensate for market failure
Building digital career literacy into Norway's career competency framework	Funding innovation and the development of products and services	Developing national approaches to quality assurance	Ensuring integration and coherence in provision
Developing resources that support individuals to acquire digital career literacy	Developing underpinning resources which enable developers and careers providers to build services	Ensuring that the development and use of digital resources is included in the code of ethics of career professionals	Identifying and addressing areas that are not covered by the market and seeking to fill these gaps
Ensuring that publicly funded Norwegian career services work to develop digital career literacy	Exploring the business models of existing private sector online careers providers in Norway	Ensuring that initial training and CPD of career practitioners addresses the use of digital resources	
Building an understanding of digital career literacy into the training of career professionals		Developing and disseminating the evidence base on the use of digital technologies in career guidance	

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1. Introduction

In a memorable piece of imagery the career development expert Phil Jarvis (2013) argues that the global labour markets are experiencing a 'perfect storm' in which a range of distinct trends and changes are coming together to reshape work and careers for citizens. The image of the 'perfect storm' is a powerful one which suggests that when a particular combination of circumstances occurs simultaneously the outcomes are dramatic and unpredictable. Jarvis argues that in the context of the Canadian and US labour markets, these trends are: recession; shifting demographics; upskilling of jobs; and an unprepared and inappropriately skilled workforce.

In Norway labour market trends are different to those in North America, but arguably they are creating their own perfect storm. Declining oil yields and finite natural resources (OG21, 2012), slowing productivity and the need to improve skills utilisation and diversify the economy beyond oil (OECD, 2014b) are all playing a part in reshaping the Norwegian labour market. In addition, like many other countries Norway is also going through a profound social and economic transformation brought about by the rapid development of new digital, robotic and internet technologies. The OECD's (2014a) diagnostic report also highlights underperformance and drop out in the education system, challenges relating to disabled Norwegians, youth who are poorly integrated into the labour market, migration, and an aging population. The OECD also raises concerns about the extent to which the structure and organisation of Norwegian government and public service provision support the development of a national response to economic and social challenges. Together these trends form Norway's 'perfect storm'. It is against this background that Norwegians will be pursuing their work, learning and career development over the next few decades.

While it is valuable to recognise the challenges that are apparent within the Norwegian economy it is also important to recognise the country's strengths. In 2014 the OECD summarised these strengths as follows:

Norway has achieved impressive levels of socio-economic development with stable and inclusive economic growth that builds on a highly qualified population, high employment participation, skilled labour immigration, high productivity, prudent management of its petroleum profits, and an inclusive welfare state. (p.10)

These strengths provide the country with the capacity to manage change, but they do not mean that the country and its labour market will remain stable.. One response from Norway to this has been to work with the OECD to develop a skills strategy and an action report. Key actions highlighted by the OECD include creating 'improved and extended professional career guidance services', creating a system of 'national online career guidance (nettveiledning)' and developing a strategy on 'informed educational and career choices'. It is to these areas that this report is principally addressed (OCED, 2014: 43-46).

Why focus on career guidance?

Career guidance describes a wide range of interventions which can support an individual to manage their engagement in learning and work.

Career guidance refers to services and activities intended to assist individuals, of any age and at any point throughout their lives, to make educational, training and occupational choices and to manage their careers... The activities may take place on an individual or group basis, and may be face-to-face or at a distance (including help lines and web-based services). (OECD, 2004: 19).

There is a considerable evidence base which attests to the efficacy of career guidance and which underpins policy development in this area (Hooley, 2014). Career guidance exists across a range of sectors (including schools, universities and employment) and in both the public and private sector. In most developed countries career guidance is most commonly funded by the public sector and as a consequence is required to justify its funding in relation to public policy goals.

OECD (2004) argues that career guidance can support three main policy areas: (1) the effective functioning of the labour market and through this the economy; (2) the effective functioning of the education system; and (3) social equity. In the context of the perfect storm described above it is relevant to note that career guidance can support increases in productivity, improvements in skills utilisation, support reforms (such as the rebalancing of the economy away from oil-reliance) and help individuals and institutions to manage periods of rapid change such as that brought about by technological change (Hooley and Dodd, 2015).

Career guidance therefore can offer considerable value to Norway. However, the country has a weak tradition of career guidance in contrast to many comparable countries such as Denmark, Finland, Germany and the UK. The OECD's (2002) review of Norway's career guidance system identified a number of weaknesses including a lack of national strategy and coordination, significant gaps in provision between regions, weak professionalisation and a tendency to focus on the provision of information over the broader and more developmental aims of career guidance.

Today, more than a decade after the OECD review the Norwegian career guidance system has undergone a major transformation. Career guidance services are located in educational institutions, regional career centres and in local employment centres and young people have a statutory entitlement to access guidance services (Euroguidance, n.d.). The country established regional partnerships for the delivery of career guidance in 2005 (made permanent in 2008) and designated Vox (the Norwegian Agency for Lifelong Learning) as the national coordinator for guidance in 2011. Together these have provided a structure for the development of guidance in Norway including the foundation of regional centres and the development of professionalisation in the country. However, the OECD (2014b) identified a number of areas for further development including: continuing gaps in access; concerns about professionalisation for both career counsellors and other types of career helpers; the need to develop online provision with attendant service development,

professionalisation and marketing needs; and the integration of entrepreneurship into the aims of career guidance.

These changes show that career guidance is developing rapidly in Norway. The development of career guidance as an activity aligns well with the broader policy concerns about the need for changes in Norway's skills system, labour market and economy. The establishment of the expert committee by the Minister of Education and Research to conduct the Government Career Guidance Initiative (Vox, 2015) is designed to address many of the remaining weaknesses in Norway's career guidance system. The relative newness of career guidance in Norway combined with strong political support for the activity offers the country an exciting opportunity to build a world class system. The development of such a system offers stakeholders the opportunity to build on evidence in the field and to make use of new technologies and other innovations.

The role of new technologies in career guidance

Career guidance has always made use of new technologies. The development of guidance in the early part of the twentieth century was intertwined with modernity and industrialisation. Parsons (1909), an early proponent of career guidance, argued that career guidance centres should have '*every facility that science can devise for the testing of the senses and capacities, and the whole physical, intellectually, and emotional make-up of the child*' (p.165). Guidance developed within the discipline of psychology and drew on the disciplines' technologies for analysing the individual and delivering and assessing the efficacy of interventions: the psychometric test; the card sort and so on. Many of these interventions were repetitive and yet required laborious analysis to produce their results. In other words they were ideal platforms for the use of information technologies as they became available. Watts (2002) discusses this intersection between information and communication technologies (ICT) and career development. He locates the beginning of this interaction in the 1960s and argues that it moved through four phases: mainframe, microcomputer, web and digital. As the final two phases unfolded a paradigm shift took place with individuals increasingly able to self-serve without direct reference to a careers professional.

We are now firmly positioned within Watts' digital phase and while there has been some research that has explored the affordances of digital technologies practice and research remains emergent (Bimrose, Kettunen and Goddard, 2015; Bright, 2015; Hooley, 2012; Hooley, Hutchinson and Watts, 2010a, 2010b). For example, in a study of national representatives to the European Lifelong Guidance Policy Network (ELGPN) it was found that ICT usage continues to vary considerably across 25 European countries. It describes practice ranging from some countries where ICT is unexploited to others where it is used more strategically as part of a lifelong guidance system (Kettunen, Vuorinen and Ruusuvirta, 2015).

At present there is no clear or globally accepted model of effective online career guidance. There is a lot of experimentation in the field, but little evidence that provides a clear basis for policy and practice. This paper will seek to conceptualise

this complex environment and draw some tentative conclusions to help frame developments in Norway.

There is an aspiration to establish an online career guidance service (nettveiledning) in Norway. Such a system is imagined as a combination of online counselling provision and information delivered through a development of the *utdanning.no* careers and educational information website. This aspiration provides a useful starting point for the development of services, but does not address the full range of opportunities offered by digital technologies.

The introduction of a variety of online career services in Norway can be seen as part of a broader movement towards e-government. The Norwegian e-Government Programme is pursuing a widespread programme of digitisation of public service that *'will generate noticeable improvements across the public sub-sectors'* and *'result in both more positive and faster interaction with the public sector for citizens and businesses alike as well as more efficient use of public sector resources'* (Norwegian Ministries, 2012: 4). This agenda seeks to establish a range of principles that will underpin the role of digital technologies in Norway's public sector.

1. Digital communication is to be the general rule for communication with the public sector.
2. The public sector is to provide unified and user-friendly digital services.
3. Login to public online services is to be simple and secure.
4. Citizens and businesses will receive mail from the public sector in a secure digital mailbox.
5. Citizens and businesses will be notified via SMS text messages and e-mail.
6. Necessary assistance is to be provided to citizens to ensure they will be able to find and use digital services.
7. Development of ICT solutions is to be viewed in the context of the public sector's work processes and organization.
8. Safeguarding and protection of privacy and information security..
9. Digitisation measures of relevance for several services are to be coordinated.

These principles provide a valuable framework for the development of online career guidance services in Norway. A particularly important issue is raised by principle 6 which recognises that digital services raise challenges for some members of the population that may in turn lead to a need for further support. We will be returning to this in more detail in section 3.

The introduction of online and digital career guidance services has often been controversial in other countries. As with other human centred services, there has been some resistance to the use of online technologies to deliver career guidance (Hooley and Goss, 2015). Those resistant have raised concerns about the loss of human contact, trivialisation and over-simplification of complex problems as well as concerns about automation and a resultant loss of professionalism as problems with digital provision. While these are all legitimate concerns they are not necessary consequences of digital delivery. There is an emerging evidence base in career

guidance alongside relevant and stronger evidence bases in the fields of online learning (e.g. Means *et al.*, 2013) and online counselling (e.g. Richards and Viganó, 2013) that attest to both the efficacy of digitally enabled approaches and the potential to combine them with professional expertise in a variety of ways. These will be explored in more detail in sections 4-9 of this report.

The use of digital technologies provides some major opportunities for the Norwegian career guidance system as well as offering some potential pitfalls. This paper will explore these issues and seek to frame them in a way that supports positive development of digital guidance practice in Norway.

About this paper

This report is based on a narrative literature review exploring online career guidance and associated issues. In addition a series of case studies have been conducted with the following countries.

- Canada
- Denmark
- Germany
- Ireland
- Italy
- New Zealand
- South Korea
- Spain

A ninth case study of England has been added by the authors. We also received some information about practice in Australia which has been used in the report but was not sufficient to write a full case study. A short summary of each of these case studies is available as an appendix to this report.

The report begins with a discussion of the way in which the internet is changing the worlds of learning and work. It argues that these fundamental changes shape individuals' careers and provide a shifting context within which career guidance needs to operate. It then moves on to explore the career management skills that individuals need to build effective careers.

The report then moves on to look at the affordances of internet technologies and how they support and enable career guidance. These affordances are considered under three main headings: online career information; online automated interactions; and online communications. The paper also includes sections which examine the utility of mobile technologies and which consider how new technologies can be effectively blended with onsite guidance technologies.

Finally the paper concludes by drawing out some key consideration for policy makers in responding to these changes.

Key questions

How does the current policy context in Norway shape the desired outcomes from online and digital career services?

What measures should be taken to ensure that the development of online and digital services are well integrated into the development of wider career guidance services in Norway?

How can the development of online and digital career guidance services be aligned with the principles of the Norwegian e-Government Programme?

How can online and digital career guidance services be designed to maximise the benefits that they offer?

2. How learning and work are changing

The internet has revolutionised almost every aspect of human life as digital technologies become increasingly embedded in our everyday interactions. It has enabled vast improvements in information acquisition with the development of search engines, such as Google, and information encyclopaedias like Wikipedia introducing an immediate ability to access information that would have been unimaginable only decades ago.

The origin of the internet is unclear as there is considerable debate concerning its definition, and there are conflicting claims with regard to its first use, but from the 1960s communication and information sharing took place on a network of connected computers. In 1962 Licklider set out a vision for a '*Global Information Network*' to enable researchers to share information and ideas (Leiner *et al.*, 2004). Widespread use of the internet did not emerge until the early 1990s after Tim Berners Lee gave a demonstration of the World Wide Web in 1989, which was subsequently released to the public the following year (Hooley *et al.*, 2012: 8). This was the catalyst for the fast paced development and expansion of the internet with the first web browsing and searching tools being developed in 1990.

By the mid-1990s the internet had become part of mainstream life and culture. Internet Explorer was launched in 1995 and Google was created in 1997. In this period email and web browsing allowed unprecedented numbers of people to access information sources using the World Wide Web and by 1994 there were 653 websites (Guardian, 2009) compared to around one billion today (internetlivestats, 2015).

The concept of Web 2.0 was developed by O'Reilly in 2004 to highlight a distinct shift towards user-generated internet content with a greater focus on information sharing between users. There has been further theoretical discussion concerning whether we have now entered a new stage of internet use (Web 3.0, 4.0 etc.) and different conceptualisations of what constitutes this new stage have been proposed. Some argue Web 3.0 is an extension of Web 2.0, whilst others highlight trends like the production of raw data by computers and the increasing integration between the internet and the physical world as evidence of a new version of the internet (Matusky, 2015). The fact that there is disagreement about the nature of Web 3.0 throws into question whether this term should be used.

In recent years the language of Web 2.0 and Web 3.0 has been increasingly problematised with commentators contesting the idea that the history of the internet can neatly be divided up into 'versions' (Allen, 2013). Alternative descriptions have been advanced like the 'social internet' (which describes the array of social tools that characterises users experience of the internet), the 'mobile internet' (highlighting the increased integration between the internet and phone technologies) and the 'internet of things' (which describes the way in which the physical world has become embedded in the internet through a range of electronics, software, sensors, and other forms of connectivity). All of these terms describe socio-technical shifts which are

enabled by new technologies but which also describe the way in which these technologies are used.

Since O'Reilly's observation of Web 2.0 in 2004 the development of social media has been incredibly rapid. Social media refers to; *'the many relatively inexpensive and widely accessible electronic tools that enable anyone to publish and access information, collaborate on a common effort, or build relationships'* (Murthy 2013: 8-9). Such interactions take place through sites such as Twitter, Facebook, MySpace and LinkedIn and facilitate diverse social interaction and mass participation as well as providing platforms through which work and learning can be organised. Social media has not only developed new ways for individuals to communicate and interact online but has established new modes of communication such as the 'like' button which have no direct onsite equivalent. 'Like' or 'favourite' buttons are used to communicate support for a particular piece of social media content such as a photo or piece of text and to bring it to the attention of others.

The importance of social media and the social transformation that has resulted can be demonstrated by the history of Facebook. The site was launched in 2004 and was initially only available to particular college and university students, before subsequently being released to the public. By 2010 Facebook surpassed Google as the most popular visited website online (Hooley *et al.*, 2012). Although Alexia (2015) currently ranks Google as the number one site with Facebook relegated once more to second place and YouTube third. Regardless of their precise ranking it is clear that both search engines and social media are now part of the social fabric of many people. Growth in the popularity of these internet sites has profound implications for learning and work.

How the internet and other digital technologies are impacting on work?

Technology has always impacted on how much work is available, the way in which this work is organised, and who profits from this work. The industrial revolution, the conveyor belt, the motor vehicle, robotics, personal computing and increasing digitisation have all transformed the nature of work. Such changes have seen the rise and fall of new companies, sectors and occupations. Such technological changes do not impact on the world of work in a straightforward or deterministic fashion; rather they have a dialectical relationship with politics, economics and society with each influencing the development of the other.

Work is continuing to change in the second decade of the twenty-first century, just as it always has. Technology is critical to many of these changes and key shifts relate to the growth and increasing sophistication of automation (Ford, 2015) and the declining importance of geographical distance. In addition we have seen the rise of the technologically enabled informal economy (Lehdonvirta, 2015; Zhuo, 2015) with tools such as Airbnb and Uber¹ challenging existing employment structures and business

¹ Airbnb (www.airbnb.co.uk) is a website that helps tourists to find accommodation through the creation of an informal hotel sector. Uber (www.uber.com) offers an informal alternative to taxis.

models. We have also seen the content created using digital technologies become a commodity in its own right leading to legal and political debates about the nature of this digital and intellectual property (Doctrow, 2014). Another important trend has been the increasing use of big data (Davenport, 2014) to understand the behaviour of consumers and respond to it in a range of ways. All of these socio-technical trends are impacting on individuals and societies, but the implications of all are contested and contestable.

Individuals can respond to such socio-technical changes in different ways according to their personalities, human capital (including their career management skills) and the wider context. Similarly, at the societal level there are a range of responses to socio-technical change that help individuals and businesses to manage the changes and which seek to actively manage inequalities and failures that emerge from change in a variety of ways. Career guidance has the potential to be part of this broader social response to socio-technical change.

One set of implications of technological change has been the emergence of entirely new employment sectors, for example, website design and development, coding, mobile app development and social media. Over the last five years the development of mobile applications alone has created nearly 500000 new jobs in the USA (European Commission, 2015). However just as the internet has created new work it has also removed existing work with some occupations disappearing or nearly disappearing altogether (e.g. travel agents). The McKinsey Institute (2011) have identified that the internet has created 2.6 new jobs for every one deleted, however McCarthy (2015) highlights that the location and setting where these new jobs are located is often not the same for those which were lost. McCarthy describes the economic forces at work in the digital economy as 'online gravity'. Companies are able to centralise their workforce around their headquarters as the need for regional visibility has diminished with an increasing focus on online business.

OECD (2014c) summarises these changes, arguing that there are four main impacts of the internet on work:

1. the creation of new jobs;
2. the transformation of existing jobs in ways that require workers to learn new skills and master new processes;
3. the movement of jobs internationally which inevitably means that occupations and sectors grow in some countries whilst declining in others; and
4. the loss of some existing forms of work.

The scale of the impact of the internet on work is closely related to the scale of its economic impact. Almost \$8 trillion are exchanged via e-commerce each year and this new global online market in turn shifts the business environment for both large and small businesses (Manyika and Roxburgh, 2011). Arguably, the internet has enabled businesses of different sizes and types to compete in a single market place. Small businesses can now create their own marketing, access viable distribution networks through sites like Amazon and eBay and take payment direct. This situation has been much trumpeted as creating an enhanced environment for the growth of entrepreneurship and the growth of small and specialised businesses. This has

considerable implications for career and numerous self-help manuals argue that individuals should 'quit their jobs' and set up internet businesses.

Anderson (2010) has theorised the internet economy, using the metaphor of the long tail. While most of the market for any goods is likely to be served by big companies the internet reduces the costs of serving minority interests. These minority interests form a long tail which provides a huge opportunity for new entrepreneurship. For example, imagine someone who is an enthusiast for paintings of fish. Before the internet they would have had to search shops and galleries to find pictures that they want and the artists who painted fish would have found it difficult to find a market. The internet transforms this situation (a Google search revealed 130,000 results for "paintings of fish") allowing the creation of numerous niche markets which potentially create livelihoods for individual creators.

Career guidance needs to take account of this new reality and pay appropriate attention to entrepreneurship and the opportunities offered by the internet.

The narrative about the growth of internet enabled entrepreneurship has been contested by writers like Doctrow (2014) who argue that it has also led to the growth of a new type of middleman (Amazon, Apple, eBay etc.) who have been the primary financial beneficiaries of this explosion of microbusinesses. While the internet may have enabled the growth of entrepreneurship, for many this entrepreneurship has not resulted in the establishment of businesses capable of sustaining livelihoods or employing others. Closely aligned to the growth of internet micro-businesses has been the development of micro labour markets like TaskRabbit². TaskRabbit enables individuals and business to advertise short term work opportunities and to negotiate payment for these with workers who are matched to their needs. For some, sites like TaskRabbit have made Arthur and Rousseau's (2001) concept of the '*boundaryless career*' real. Workers are now in the position to work, when and how they want and to move away from the confines of an employer. However, others have critiqued the growth of these sites arguing that they simply enable casualisation and ultimately exert a downward pressure on wages, working conditions and living standards (Kuttner, 2013). It is clear that the implications of the internet for employment and entrepreneurship are complex and contested and it is likely to be important for career guidance professionals to discuss this complexity with their clients.

In addition, to the macro-level impacts on the labour market, new technologies also have dramatic impacts on how the world of work is organised and how businesses provide services, communicate, generate income and how employees actually carry out their work. A panel survey of employed internet users, carried out by Pew Research in 2013, found that 94% of jobholders use the internet and that this includes workers from a very diverse range of businesses from large corporations down to SMEs and those located in cities, suburbs and rural areas (Pew Research, 2014). Of this internet usage email communication is by far the most common.

The use of the internet is embedded into most occupations. To be at work is increasingly to be connected to the internet. This raises challenges for organisations

² TaskRabbit (<https://www.taskrabbit.co.uk>) is a way to short term labour online.

with concerns about how workers use the internet whilst at work and whether an increased amount of personal internet use (often termed “cyberslacking”) reduces productivity (Vitak, Crouse and LaRose, 2011).

The internet has also had a large impact on how individuals access the world of work. Online job boards, matching software and e-recruitment have transformed the infrastructure through which individuals transition into jobs (Lang *et al.*, 2011). The case study of Ireland revealed that it is increasingly common for employers to conduct interviews online.

Employers are making use of social media in the recruitment process. For example, in France 49% of recruiters use social media to recruit with 43% of them admitting that they “google” applicants whilst a further 8% acknowledge that they have rejected applicants based on search engine results (Girard *et al.*, 2014). Employers are not only using social network sites as a tool for screening prospective applicants but are also actively sourcing and increasing their pool of applicants from sites via ‘social recruiting’. This involves searching for potential applicants as well as building a presence on social media and using it to inform and engage potential recruits (Vicknair *et al.*, 2010). However, it is less clear how employers are integrating social media into their recruitment processes, Kluemper (2013) cites a 2011 SHRM (Society for Human Resource Management) survey of e-recruitment practices which found that more than half (56%) of recruiters had no formal HR policy on social network screening. Kluemper also highlights that there are a myriad of issues that recruiters must consider when undertaking recruitment or applicant screening via social network sites such as privacy issues, discrimination, negligent hiring and impression management (Kluemper, 2013: 18) indicating that this shift in recruitment practices is highly complex. The extent to which recruiters weigh the information gathered through social media surveillance in relation to more conventional information gathered through the recruitment process remains an unknown entity and requires further research into developing HR practices.

The growing importance of the internet in recruitment has implications for individuals and the development of their career management skills. Stevenson, in a study of job searching, found that those searching online were more likely to already be employed and searching for different opportunities rather than being out of work, whilst those that were unemployed were less likely to use online searching sites to look for work (Stevenson, 2006). This highlights that individuals need to be skilled in finding opportunities and in navigating e-recruitment processes. It also draws attention to the fact that these skills are unlikely to be evenly distributed through society. These issues of digital access and digital literacy will be discussed in more detail in the next section.

The growing role of social media in e-recruitment is even more challenging for individuals. There are clear dangers in unwise use of the internet. Ronson (2015) recounts numerous examples of where poor or flippant use of the internet has resulted in major personal and professional problems for individuals. For example, Justine Sacco told a joke on Twitter about Africa and AIDS to her 170 followers. The tweet went viral and resulted in her global public shaming and the rapid loss of her job. Her joke may have been in poor taste although Ronson argues that it was

misconstrued by many who read it and that the intended irony was missed. However, the level of her punishment did not seem commensurate with the crime committed. Sacco's ill thought-out, humorous tweet had major career implications that she was unable to control and which will endure for years whenever she applies for a job. Ronson also makes the point that people do not actually have to be a social media user to suffer negative consequences from social media. By telling the story of Hank, a computer developer, whose behaviour at a conference (telling juvenile jokes to a colleague) was reported on social media with an accompanying photo. Again he lost his job because of what happened on social media and acquired a permanent online record of this event. Social media served as a surveillance system for his behaviour, making it available to future employers.

If social media can create negative consequences for an individual's career, is it also true that it can create positive career capital? While little is known about how employers make decisions online it is clear that social media provides them with a resource which can influence hiring decisions and potentially inform employers' perception about in-work performance. Successful personal branding with an effective online presence, through social media posting, blogs and wikis, can make applicants stand out from the crowd and it can also be a way for those at the beginning of their career to highlight their strengths and skills despite a lack of work experience. Furthermore, according to the Oxford Internet Institute individuals who are active on social media can actually be developing employment-relevant skills (cited in Guardian, 2013). In particular they highlight the development of communication skills that is connected to participation in social media.

How the internet and other digital technologies are impacting on learning?

There is a long tradition of using new technologies to support learning. ICT has been used in education for at least forty years. Electronic learning (e-learning) can be used to describe the general usage of computer software for a wider range of educational purposes including educational programming, simulations and games (Nicholson 2007).

ICT has also been used extensively to provide information about educational opportunities and to facilitate application processes. In Ireland, for example, there are a range of online learning information services which support learners to find out about and apply to different elements of the education system.

In the early 1960s Bitzer, based at the University of Illinois, developed a timeshare computer system named PLATO which aimed at improving student literacy. This system was facilitated by a graphics interface and enabled students and teachers to interact and communicate using electronic notes (Nicholson, 2007).

Two decades before the World Wide Web came on the scene, the PLATO system pioneered online forums and message boards, email, chat rooms, instant messaging, remote screen sharing, and multiplayer games, leading to

the emergence of what was perhaps the world's first online community.
(Woolley,1994).

Initially the limited scope of PLATO meant that it was only used in a handful of terminals in one classroom but from 1972 the system was slowly developed and eventually it was able to support up to 1,000 simultaneous users. The legacy left by PLATO can be seen in current digital teaching facilitators, such as Blackboard³, and the forum messaging element laid the groundwork for conference calling and instant messenger software (Woolley 1994).

The internet has opened doors for information access, automated learning interactions and interaction between students, their peers and their teachers on a huge scale. These opportunities have been grasped across the educational spectrum and it has been operationalised in schools (Barbour, 2013), higher education (Salmon, 2005) and workplace learning (Cheng *et al.*, 2014). There are a range of reasons for implementing e-learning and online approaches that can be summarised as follows.

- **Enhancing learner experiences.** E-learning can provide learners with additional resources and support that can enhance their existing studies.
- **Increasing efficiency.** E-learning can increase efficiency, reducing the need for expensive learning spaces and increasing the productivity of human resources.
- **Improving access.** E-learning can enable more people to access learning and open up educational opportunities for people who otherwise would struggle to access learning e.g. working people or those who are geographically remote.

There is considerable evidence which attests to the effectiveness of e-learning across a wide range of contexts. There have been meta-analyses and systematic reviews on a wide range of aspects of e-learning including its use in postsecondary education (Bell and Federman, 2013), the role of social media (Cheston *et al.*, 2013), virtual reality (Merchant *et al.*, 2014), and the role of computer games in learning (serious games) (Connolly *et al.*, 2012). In general the evidence for the effectiveness of e-learning is strong and continuing to grow. E-learning is widely used and embedded in both face-to-face learning environments and as a platform for distance learning. There is an increasingly broad set of evidence based practices that can be drawn on in the creation of e-learning and potentially utilised in the creation of career guidance e-learning programmes.

An interesting recent development has seen higher education institutions expand their provision of distance learning courses through free courses. This has primarily been done for marketing purposes to broaden the diversity of the audience for higher education and to promote the institutions, but has led to commentators like Harden (2012) predicting '*the end of the university as we know it*'. The idea that higher education institutions are offering courses for free, especially given the scalable

³ Blackboard (<http://www.blackboard.com/>) is one of the world's leading e-learning systems.

pedagogy on which these courses are based has led to much excitement about the possibility of delivering higher education in a new, more accessible and cheaper way. These Massive Open Online Courses (MOOCs) have therefore become a major political as well as technological issue.

MOOCs provide online learning materials to their participants, but also combine this with automated interactions (e.g. self-test quizzes) and opportunities for participants to communicate with each other and, to a more limited extent, with faculty from the universities at which the MOOCs are based.

A MOOC is not another online course but it has different characteristics; the key concept is not to repeat the same classic academic teaching but be able to engage participants to create and share knowledge in a connectionist approach. (Blanco et al., 2013: 553).

There is also a demarcation between types of MOOCs namely: xMOOCs and cMOOCs. xMOOCs follow a more traditional educational path with a behaviourist approach and have a certificated outcome, whereas cMOOCs are more innovative in that they are based on networking and connectivism (Blanco et al., 2013). MOOCs promise an innovative learning experience that reaches out beyond the conventional higher education cohort. There has been considerable interest in MOOCs in Norway. There has been a public commission on the issue and many Norwegian universities are beginning to experiment with the use of MOOCs (Bates, 2013).

Despite the promise of MOOCs the model has also been heavily criticised. MOOCs currently have no viable underpinning business model. At present they serve a range of functions for universities but are essentially dependent on the existence of more conventional kinds of teaching to enable access. Secondly there are major concerns about the effectiveness of MOOCs and in particular concerns about the level of student dropout from them. Whilst initial engagement figures may be very high, a study of one MOOC from the University of London found that while the first day of the course peaked at 122,144 users enrolled the course had on average a less than 5% completion rate (Brammar and Winter, 2015). A further criticism is made about the lack of meaningful accreditation that results from MOOCs. Finally because MOOCs are a recent innovation there is a lack of research into their efficacy. MOOCs therefore promise much, but their worth remain unproven.

There is a well-established and well-evidenced tradition of e-learning. Given the growth in e-learning it is reasonable to expect a growing percentage of the users of careers services in Norway will be experienced in using the internet to learn. Career guidance services will need to be able to advise about the relative pros and cons of e-learning and to also make use of these technologies to delivery career guidance.

Key questions

How should the impact of technology on the world of work influence the development of career guidance in Norway? How aware are practitioners of the shifts in terms of employment sectors, the nature of work and the nature of recruitment?

How should the impact of technology on the provision of learning influence the development of career guidance in Norway? When should individuals be advised to engage with e-learning, MOOCs and other forms of technology enhanced learning?

How can e-learning technologies be repurposed for the delivery of career guidance services in Norway?

3. The need for digital career literacy

The impact of digital technologies on the worlds of learning and work raises a number of critical issues. The shifting context raises questions as to what skills, aptitudes and attitudes an individual may need to succeed. What the consequences of failing to acquire these skills may be and what the role of career services in helping individuals to develop these skills is.

In many professions a moderate level of competence in ICT is essential for individuals to be successful. Without ICT skills participation in learning and work is substantially limited. Furthermore, given the aspirations of the Norwegian e-Government Programme it will also become increasingly difficult to access government services (including career guidance services) without ICT skills.

In 2012 the Norwegian Ministry of Government Administration, Reform and Church Affairs reported that 270,000 Norwegians were not online (about 7% of the population). Non-participation is linked to age, gender, employment status and educational level. It is also likely that rurality is a factor in determining digital access. The government is committed to halving the number of online non-participants by 2017 and ensuring that everyone who wants to participate can do so.

The detailed statistics presented by the Norwegian Ministry of Government Administration, Reform and Church Affairs also suggest that not everyone is equally skilled and experienced in the online environment. While some Norwegians are undertaking a wide range of activities online and would have few problems in engaging with online career guidance, other people's online participation is more limited, making access to online career guidance unequal. So, for example, only 82% of people interact with public services online, 36% make telephone or video calls over the internet and 11% make medical appointments (Norwegian Ministry of Government Administration, Reform and Church Affairs, 2012). Such observations highlight the differences between digital participation and digital literacy. It is possible for an individual to regularly use the internet (and so be a participant) whilst lacking the skills to undertake many of the activities that would enable full participation in the labour market, education system or e-Government. It is important that, as online career guidance services are developed in Norway, the realities of non-participation and low levels of digital literacy are used to inform the design of services and that service provision is supported by initiatives that aim to enhance digital literacy.

One response to concerns about digital participation and digital literacy is to view it as essentially a generational issue that will fade over time. This perspective draws on Prensky's concept of the '*digital native*' (Prensky, 2001, 2005, 2006). Prensky argues that the generations born after the emergence of the internet are natural internet users who are more able to make use of its affordances than the generations that preceded them (who he labels as digital immigrants). He argues that 'digital natives' think and process information fundamentally differently from their predecessors as a result of being surrounded by new technology and argues that the recognition of

these fundamental differences should alter the way in which education is delivered to the native generations.

Prensky's arguments have been contested by a wide range of writers and researchers. Bennett, Maton and Kervin (2008) argue that the concept of the 'digital native' is essentially a '*moral panic*' with little basis in evidence. Other scholars also criticise the 'digital natives' idea suggesting that it is unhelpful, poorly evidenced and lacking in descriptive power (e.g. Selwyn, 2009; Brown and Czerniewicz, 2010). Such critiques usually highlight the diversity that exists within generations as well as between them in terms of digital skill and patterns of internet use. They also argue that digital participation is more usefully seen as a collection of skills and experiences rather than a single aptitude. It is possible to be an excellent World of Warcraft player without knowing how to trade on eBay or use LinkedIn to find a job. This recognition of multi-skilled nature of online participation suggests that there will be a set of digitally relevant skills which relate to online career building.

Digital skills ranging from a basic knowledge of word processing through to the advanced skills that are required for the creation of digital technologies are increasingly critical to the economy. Many countries are responding to the need for digital skills by actively developing them through the education system. For example, both governments in Germany and Ireland are developing digital strategies for the education system. Other countries are already delivering programmes designed to enhance digital skills such as the App Education course in Spain which is delivered to school students. The course focuses on the design and creation of apps for mobile devices. The course, which had over 12,000 students enrolled in the 2014-2015 school year, not only improved digital literacy and understanding of how apps are produced, but also promoted team work in the classroom and encouraged entrepreneurship spirit amongst students and so improved their employability skills (see the Spanish case study in the appendix). While in Australia the Digital Careers programme has sought to promote the status of digital skills and encourage students to consider careers in information and communications technology (ICT). In economies which seek to increase their high tech industries the promotion of the development of all forms of digital skills is likely to be a key message for career guidance.

Digital literacy and career competencies

Much recent thinking about the nature and purpose of career guidance services has emphasised the importance of developing career management skills (Jarvis, 2003; ELGPN, 2012; Hooley, Watts, Sultana and Neary, 2013). Career management skills (CMS) describe a set of skills, attitudes and aptitudes which enable individuals to make their way through life, learning and work to achieve their aspirations. The argument is that engagement with career guidance empowers individuals by providing them with an enhanced capacity to manage their own careers.

Tomsen (2014) looked at CMS from a Nordic perspective. She argues for the use of the term '*career competencies*' within the Nordic countries as a range of career guidance activities exist in the Nordic countries which develop career competencies.

But there is a weak tradition of organising and theorising this activity in the same way as in the English speaking world. Tomsen draws on Haug (2014) to explore the development of CMS in Norway. She notes that there is a considerable interest in CMS/career competencies within Norway and some appetite to develop a CMS framework for the country. Haug chaired the Norwegian Career Management Skills Expert Group which argued that there would be value in the development of such a framework for Norwegian career guidance (Vox, 2014).

Given the renewed focus on career guidance following the OECD Skills Strategy Action Report there is a supportive environment to continue the development of a Norwegian CMS framework. The Norwegian framework could function as an integrative instrument drawing together career guidance activities across different life stages and delivered through different modes (face-to-face, telephone and online) around common objectives. Given the discussion around the importance of the internet for learning and work it is important that any CMS framework acknowledges this context and encourages the development of skills which enable individuals to utilise the internet as a context for the development of their careers.

So far this section has discussed ICT skills and CMS as essentially separate categories, but there is an important area of overlap between the two. For example, the ability to research job opportunities online requires both ICT skills (using search engines, sorting through information, responding in appropriate ways) and CMS (labour market awareness, research skills, understanding the recruitment process). This area of overlap is increasingly important particularly considering the growing importance of the internet to individuals' career development. It is also important to consider a number of context specific skills which are unique to the area of online career building. For example, the successful utilisation of professional networking sites like LinkedIn undoubtedly requires ICT skills as well as CMS but is not simply a combination of these two skill sets. The new contexts made available by the development of socio-technical innovations like LinkedIn require new skills and knowledge which often has no direct face-to-face alternative.

None of the existing CMS frameworks (in the USA, Canada, Australia, England and Scotland)⁴ include much detail that can support the development of online CMS. Hooley (2012: 5) describes these online CMS as '*digital career literacy*' which he describes as the '*ability to use the online environment, to search, to make contacts, to get questions answered and to build a positive professional reputation.*' Hooley notes that such skills draw on a range of existing CMS, information and digital literacy as well as interpersonal skills which are being recontextualised for the online environment.

Hooley goes on to propose a CMS framework for digital career literacy which he describes as the '*Seven C's of digital career literacy*'.

- **Changing** describes the ability to understand and adapt to changing online career contexts and to learn to use new technologies for the purpose of career building.

⁴ See Hooley *et al.* (2013) for a discussion of the history and policy relevance of these CMS frameworks.

- **Collecting** describes the ability to source, manage and retrieve career information and resources.
- **Critiquing** describes the ability to understand the nature of online career information and resources, to analyse its provenance and to consider its usefulness for a career.
- **Connecting** describes the ability to build relationships and networks online that can support career development.
- **Communicating** describes the ability to interact effectively across a range of different platforms, to understand the genre and netiquette of different interactions and to use them in the context of career.
- **Creating** describes the ability to create online content that effectively represents the individual, their interests and their career history.
- **Curating** describes the ability of an individual to reflect on and develop their digital footprint and online networks as part of their career building.

(Hooley, 2012; further development of the model in Longridge, Hooley and Staunton, 2013)

The Seven Cs model articulates how the internet reframes CMS or career competencies. It highlights the complexity of online career building including research and information management skills, interpersonal skills, the capacity to create a range of forms of online content and a willingness to manage online personal brand.

The purpose of presenting the Seven Cs model in this report is not to argue that it should be adopted in Norway but to show that there are elements that can be used for the Norwegian framework. As Sultana (2012) notes the concept of career management skills varies across different countries and we should be cautious about transplanting a framework from one national context to another. Particularly when it comes to the Seven C's model as it has only been patchily implemented by a few practitioners and no evaluation has been undertaken yet of its efficacy. However, it does offer a resource that may be useful to inform the development of a future Norwegian CMS Framework.

Developing digital career literacy

There is a growing range of practice which has sought to develop interventions that support individuals to develop their digital career literacy. Kelly (2014) details how the use of online job searching workshops and LinkedIn have become a core part of the offer in higher education careers work in Ireland. Longridge and Hooley (2012) report on an initiative in England to engage undergraduates to actively developing their online brand and network. One thing that is noticeable about both of these initiatives is that while their content addresses the online environment they are delivered in a blended approach beginning with a period of face-to-face delivery.

Key questions

What facilities are available for those Norwegians who are either internet non-participants or who are insufficiently digitally literate to access online career guidance services as they are developed?

How can online career guidance services be best designed to maximise their accessibility?

How will Norwegians seeking career guidance be supported to increase both their general ICT skills and their digital career literacy?

How will digital career literacy be acknowledge and addressed in any plan to develop a Norwegian CMS framework?

4. Delivering careers services on the web

The internet provides an important context within which individuals build their careers. It is possible for individuals to interact with this context in a range of ways. A focus on digital career literacy or digital career competencies provides a way for career guidance services and policy makers to skill individuals for the digital environment in which they are participating. The internet also offers major opportunities for the delivery of career guidance. Online services can:

- **transcend geography** by being accessible to all those seeking careers guidance, regardless of where they live or work. Conventional career guidance services are necessarily located in population centres and consequently may present access problems for those who are rurally located, who have mobility issues or who cannot access services during working hours. The National Centre for Guidance in Education in Ireland highlight the value that videoconferencing technologies like Skype and FaceTime bring to practitioners working with clients in rural areas.
- **provide equality of access** by allowing a diverse range of clients to access services as long as they have sufficient digital access and digital literacy.
- **provide immediacy of access** to a range of different levels of service. Online services, particularly those that are based around self-access of information and resources allow people to access resources when they choose rather than relying on the availability of service providers.
- **provide confidential and discrete services** that enable individuals to make enquiries without having to present at a local centre or location.
- **provide flexible provision** with a greater capacity to manage and respond to peaks in demand (e.g. on specific days of the week, at certain times of the year and in response to campaigns or initiatives), provide extended out-of-hours support and even implement a queuing system at busy periods.
- **provide 'specialist' services**, for example, around the needs of specific sectors, redundancy, retirement, job change, apprenticeships or in different languages. Such specialised services can be difficult to provide locally and may be better provided nationally for reasons of economy.
- **provide campaign support** by linking online service provision to national media campaigns about work and learning. By providing individuals with an opportunity to immediately follow up issues that are raised in the media ensures the impact of such campaigns can be deepened.
- **potentially provide cost savings** by making use of self-access, automation, economies of scale. The extent and nature of any savings depends entirely on the nature of the online services delivered. As will be argued digital career guidance services can take a wide variety of forms and each form will have its own costs and benefits.

Such benefits are dependent on the successful marketing of online and distance services to the population. If people are unaware of the existence of such services they will not be used. As a result, effective marketing is a critical question in the

establishment of an online service offer. Marketing of career services also serves the purpose of raising the profile of career and career development generally and encouraging people to consider whether they would benefit from additional help and support with their career. Consequently it can both serve to drive demand for careers service and to facilitate the meeting of this demand. Watts and Dent (2008) concluded that effective marketing was critical in driving citizen demand for the Learndirect telephone advice service in the UK.

Online marketing approaches offer considerable opportunities for marketing online career guidance services. The risk associated with it is that this kind of approach will only engage the most digitally literate citizens. It is important, therefore, that online marketing is balanced with the use of more conventional forms of marketing (direct mail, referral from existing services, television and radio) which are designed to encourage people to take up online services.

Online social marketing is also likely to be an important part of the marketing mix for new online services. The use of social networking sites such as Facebook, Twitter and LinkedIn has opened up opportunities for organisations to target particular groups for services for free or at a low cost (Mata and Quesada, 2014).

As sections 5-9 of this report will demonstrate there is now a considerable amount of practice in the delivery of online career guidance. Hooley, Hutchinson and Watts (2010a) argue that there are three main forms that online career guidance can take. The first is addressed to the provision of information which supports individual career building; the second to the provision of various kinds of automated interaction including career assessments, simulations and games, and the final to kinds of communication. This typology will be used to structure the next three sections of this report.

A range of theoretical positions underpin practice in career guidance. In recent years ideas such as system theory, chaos theory, planned happenstance and life design have been widely discussed within the field. At present there is very little work that has examined the relevance of these different theoretical approaches to online careers work. This is likely to be an important area for future research as online practice becomes more established. It also highlights the fact that, as with face-to-face practice, the delivery of online career guidance is likely to remain diverse with different practitioners and users engaging with it in different ways and seeking different kinds of outcomes.

Key questions

What is the rationale for the development of an online career guidance service in Norway?

What is the appropriate mix of different kinds of online provision within such a service?

How can services be effectively marketed to the population?

5. Career information

The internet provides access to a vast repository of resources. Such information both extend access to conventional kinds of information such as job specifications and information about courses, but also cultivates the development and utilisation of new types of career information which make use of the inter-linked and multi-media nature of the internet. Since the mid-1990s there has been a proliferation of career related websites which provide careers information in a variety of forms.

Presenting information on public career websites

Careers service websites from the public sector or government are a useful resource for impartial information. Many countries provide a public sector careers website as part of their career guidance provision. Examples include sites in Australia (myfuture), Canada (ALIS); Denmark (eVejledning (e-guidance)); England (the National Careers Service), Ireland (CareersPortal) and South Korea (CareerNet)⁵. Such sites typically provide a range of information as shown in figure 1.

The information that is provided by such websites take a variety of forms ranging from the presentation of statistical information, written career narratives and informative articles about pathways and daily life on the job. This information can be provided in a manner of ways including video content or other interactive interfaces. In South Korea smart textbooks have been developed on career and jobs. They are used at all levels of schooling. In addition smart textbook homepages have been created⁶ so that students can log on to the books and use them anywhere.

Career information websites of this kind are usually aimed at citizens. In some cases they will be focused on either young people or adults while others may be focused more generally. Many sites provide sections which reinterpret the information for other stakeholders such as parents, teachers or employers.

⁵ See myfuture (www.myfuture.edu.au); ALIS (<http://alis.alberta.ca>); eVejledning (e-guidance) (<https://www.ug.dk/evejledning/eguidance-evejledning>); National Careers Service (<https://nationalcareersservice.direct.gov.uk>); CareersPortal (http://www.career.go.kr/cnet/front/eng/eng_home_new.do); and CareerNet (http://www.career.go.kr/cnet/front/eng/eng_home_new.do).

⁶ See smartbook.career.go.kr.

Figure 1: Information provided on public sector careers sites⁷

Type of information	Typically includes
Self-awareness information	<ul style="list-style-type: none"> Skills checklists and audits Qualifications Personal conduct and attitude Selling your skills to an employer
Opportunity awareness information	<ul style="list-style-type: none"> Occupational profiles Sector information Information on labour market trends How to find opportunities Courses and learning opportunities Funding information (for training) Vacancy information
Decision making information	<ul style="list-style-type: none"> Managing key decision points e.g. what qualifications to take, what university to attend, choosing your first job. Decision making styles and approaches.
Transition (recruitment) support information	<ul style="list-style-type: none"> Getting work experience C.V.'s and making applications. Interviews and selection processes. Managing rejection.
Career building information	<ul style="list-style-type: none"> Being effective at work Getting promoted Dealing with redundancy and career change Managing challenges e.g. stress

⁷ Typology adapted from Law and Watts' (2015) DOTS model.

The broader market in career information

Alongside public careers sites there is usually parallel information on the sites of companies, recruitment agencies and sector based organisations. The information provided by these non-governmental career sites is variable ranging from very high quality information with consistent updates to poorly researched information in poorly maintained sites.

In addition, information sources are opened up by the global nature of the internet. Citizens of Norway are able to access career information from across the world. This means that an individual seeking advice about interviews in Oslo may find information produced in Copenhagen, London, Los Angeles or Tokyo. Some of this information may be helpful, but in other cases cultural context may mean that what is good advice where the site was authored is questionable or even harmful in the employment and cultural context of Norway. A key question for government services is how to engage with this wider marketplace of career information in a way that makes use of its diversity and coverage whilst attending to issues of quality.

An important aspect of this broader market of career information is the provision of job vacancy information. Vacancy information provides individuals with access to information about available job opportunities. It also provides both professionals and individuals with a source of live labour market data that can aid career decision making. Reviewing the opportunities listed on a vacancy site provides information about what occupations are recruiting and where. Vacancy listings are sometimes a feature of public sector careers sites (e.g. the UK's Universal Jobmatch⁸ or Jobs Ireland⁹) but are more usually run by the private sector (e.g. Reed¹⁰).

These different types of information about careers, learning pathways and the labour market are sometimes described collectively as labour market information (LMI). The broad category of LMI includes a range of government data which provides insights into the current working of the labour market. This might include administrative data collected by government as well as research data. One concern for a range of governments has been to make this data available in a way that supports career building. This has been linked to calls for open government and also to trends around 'big data'. Big data describes the vast datasets of digital information that can be collected and analysed using an array of tools (Economist, 2010). Much of this big data is already published online and it is the development of protocols and tools which allow for its analysis and representation that have the potential to transform it into valuable LMI resources. A good example of this is offered by the UK's LMI for All¹¹ online data portal, which connects and standardises existing sources of high quality, reliable labour market information (LMI). This data is made freely available via an Application Programming Interface (API) for use in websites and applications. LMI for All is not designed as a resource for individuals, but rather seeks to draw together government owned sources of information in a way that is useful to

⁸ Universal Jobmatch (<https://www.gov.uk/jobsearch>) is a UK based vacancy site aimed at unemployed workers.

⁹ Jobs Ireland (<http://jobseeker.fas.ie/>)

¹⁰ Reed is a large recruitment website in the UK (www.reed.co.uk).

¹¹ LMI for All (<http://www.lmiforall.org.uk/>).

developers and careers providers. The LMI for All data provides an underpinning information resource for careers websites. Those sites that use it (see icould¹² for an example) can be confident that they are providing up to date information which is quality assured by government. The O*Net¹³ resource in the USA fulfils a similar function to LMI for All in the UK of providing underpinning national LMI.

The growth of social media and other forms of user generated content opens up a range of new opportunities as well as potential pitfalls. Every web user can post information about their experiences in finding work, working in companies, hiring staff and participating in learning. This creates a rich environment within which individuals can find anecdotes and narratives about career opportunities via blogs, Tumblr, Twitter, Facebook and other social media. But, such information also has the power to mislead, offer partial truths and confuse. Again this raises the question of how public careers services engage with such information: referring to it, warning people against it, or simply ignoring it.

Organising career information

The discussion in this section explored the value of publicly authored and quality assured content in relation to a variety of other forms of information with different provenance. All of these different types of information can have a value, but understanding the differences between them and ensuring that they are properly signalled is critical. Meta-data (information that describes information) are key to ensuring that information is clear, but there are also challenges here about how such meta-data can be created and maintained.

The organisation and description of career information was conventionally achieved through the creation of an expert taxonomy, an example in the careers field was the Connexions Resource Centre Index (Connexions, 2008). The growth of social technologies on the internet can replace these conventional expert-designed taxonomies with folksonomies. A folksonomy is an organisational structure defined by users rather than by experts or designers. It allows multiple personal structures to be created (by tagging resources) as well as offering the capacity to aggregate these subjective individual structures together into a collective meta-data structure. Users can access these aggregated lists or the individual lists to find out the sites that have been tagged as relating to career (or any other tag that they are interested in) most often by other users, and to access a series of link tagged to related search terms. The opportunity to use these kinds of user tagging tools to help individuals to organise content they are interested alongside using a like or favourite button to prioritise or rate content for users raises a number of possibilities for providers of online careers services. These will be discussed in the next section.

¹² icould (<http://icould.com/>) is a careers website in the UK which is largely funded by a philanthropist. Its core offer is the provision of over 1000 careers videos. The link with LMI for All has supplemented this qualitative information with quantitative information drawn from government statistics.

¹³ O*Net (<https://www.onetonline.org/>).

Making effective use of information

Hooley (2012) argues that we need to be careful about viewing the internet as a careers library and suggests that a better way would be to see the internet as a career marketplace in which traders with varying degrees of authority and integrity set out their wares. So alongside the provision of career information as a professional activity there will also be a range of individuals and organisations providing career information for other reasons. Grubb (2002) has urged caution about celebrating the availability of online careers information without also recognising the skills and literacies that underpin the effective use of these. Empirical studies (Howieson *et al.*, 2009) also questioned the usefulness of information based careers websites without a strong supportive infrastructure for learning and development.

For governments the growth of career information provides both opportunities and challenges. By pursuing a strategy of opening up government data to citizens (such as the UK's LMI for All project) and stimulating the growth of online careers provision, governments can provide the digitally literate user with the information and resources to support their career building. This creates a need to quality assure information that can be very challenging and raises questions about how citizens digital career literacy can be built (Hooley, 2012; Longridge *et al.*, 2013).

Key questions

What information should be included as part of a career website in Norway?

How should any public sector careers website relate to the wider range of career and labour market information sources that are available beyond what is provided on public sector sites?

Should Norway be seeking to develop an equivalent to the UK's LMI for All project to make government data available in a format that is relevant to career builders?

How can the tagging and liking technologies be used to improve user experiences when using career websites?

6. Automated interactions

One of the attractions of digital technologies is that they are able to move beyond simply presenting static information for an individual to consume to providing an experience that is responsive to the needs and actions of the individual. In such cases how the individual behaves shifts the nature of the experience. In the context of career development this can mean that an individual is not simply dependent on their own research skills to find the information or resources that they require but rather can rely on an automated service to help them.

Some automated interactions seek in effect to replace a human interaction (e.g. automated guidance counselling). While other automated interactions provide new kinds of services that do not seek to reproduce what a human being can do but rather provide something different (e.g. providing access to simulated environments).

Can you replace a guidance professional with a machine?

The American folk legend of John Henry dramatised the struggle of the industrial age. In it John Henry, who stands as the cypher for the manual working class, challenges a steam powered hammer to a competition. In most versions of the legend Henry wins the competition, outperforming his mechanical rival, but dies once the competition is complete (Wikipedia, 2015).

A century after John Henry fought and died it is clear that industrial labourers are, under most circumstances, no match for a machine. However, those in the caring professions (such as career guidance) have remained confident that their work could not be replaced by a machine. The combination of interpersonal skill, empathy and contextual knowledge as well as clients' distrust of machines means that human-centred professions have remained optimistic about their future despite the steady growth of automation.

Ford's (2015) work on automation suggests that human centred services are not immune from automation. He cites the development of Watson an artificially intelligent machine built by IBM which is capable of answering natural language questions and drawing together a wide range of information sources in formulating its answer. Ford discusses Watson's applications in healthcare describing its capacity to draw together and synthesise medical information to inform diagnostics. There seems no reason why these technologies could not also be used in career guidance. The ability to draw together the vast amount of information described in the previous section to create a synthesis that might support career decision making would be hugely valuable. Such a synthesis is beyond the capacity of a human professional, but might be possible for a computer. For example, such a machine might be able to calculate the rate of return on pursuing a degree in Geology in relation to current statistics about the availability of mineral deposits and the labour market trends of jobs that require a Geology degree. Were such a system available it might prove popular with clients for at least some of their queries.

As of yet the use of Watson and other powerful kinds of artificial intelligence for career guidance remains as science fiction. Even were such a technology to be affordable and available, it would focus career guidance into a narrow technical area about labour market decision making. Were such a tool to seriously challenge human professionals it would need to be able to act on a far wider range of fronts including examining and stimulating human motivation for learning and career development, providing support and mentoring, interceding and advocating on the basis of clients. At present the possibility of a career guidance robot looks remote.

Computer-assisted guidance systems

While sophisticated artificial intelligence has yet to impact on career guidance, there is a tradition of computer-assisted guidance systems (CAGS) that goes back at least to the 1960s (Harris-Bowlsbey, 2013). Such systems have used a variety of career theories to provide individuals with a framework for career decision-making. More recently they have been able to interface with large public datasets such as O*NET in the USA.

CAGS fulfil a range of functions within guidance including facilitating initial exploration and diagnostics, psychometric testing and matching to occupations or to actual jobs. There is considerable research that supports the idea that these kinds of automated interactions can be highly effective if administered appropriately (Tracey, 2010; Betz and Turner, 2011). Harris-Bowlsbey (2013) recounts the evidence that supports the use of such systems, arguing that they increase occupational awareness, self-awareness and confidence in educational and career decisions. She also argues that there is some evidence that these systems support retention and progression within the education system.

There are a vast array of CAGS available provided by governments, the third sector and private companies. Some are available to those who pay while others are free. Examples of tools that are currently available for free include a suite of tools offered by the National Careers Service (England), a similar set offered as part of Careers Portal (Ireland), the My Strengths (Scotland), Careers New Zealand provides a suite of tools including CareerQuest, the Employment Readiness Scale (Canada) and a wide range of other tools.¹⁴ Such tools are provided free of charge as part of a national career guidance offer. Other tools are offered as part of a package of provision provided by recruitment companies or media providers.

Despite the explosion of free CAGS there are still a large number of companies that sell CAGS packages, usually for the education market. These include Career Cruising¹⁵, the Career Guidance System (EBSCO) and Kuder, U-Explore. These

¹⁴ See National Careers Service, Career tools (<https://nationalcareersservice.direct.gov.uk/tools/Pages/default.aspx>); Careers Portal (<http://www.careersportal.ie/>); Skills Development Scotland, Welcome to My Strengths (<http://www.myworldofwork.co.uk/landing-mystrengths>). Note this tool is unavailable to use outside of Scotland; CareersNZ, CareerQuest (<http://www.careers.govt.nz/tools/careerquest/>); Employment Readiness Scale (<http://www.employmentreadiness.org/>)

¹⁵ Career Cruising (<http://public.careercruising.com/en/>); EBSCO, Career Guidance System, (<https://www.ebscohost.com/us-high-schools/career-guidance-system>); Kuder

kinds of products are typically better integrated into the education system than the more generic products that are available for free online and often draw on and represent large amounts of education information e.g. university course information. Because of this integration into local systems it can be challenging to transfer these kinds of systems from one country to another. There are a number of CAGS providers that operate internationally and are experienced in translating and recontextualising their products for different environments although there are also those who have urged the need for an increased sophistication in the way in which CAGS are transferred from one cultural context to another (Blustein and Ellis, 2000).

While there is evidence of the efficacy of CAGS the evidence in the field usually points to the importance of a blended delivery mix (de Raaf, Shek-wai Hui and Vincent, 2012; McLaren, 2013). While accessing CAGS as a form of self-study can be useful there are also dangers in such access. There are a wide range of CAGS available online which have no basis in theory or research and which offer opportunities to choose your career by numerology¹⁶, astrology¹⁷ and a host of other pseudo-scientific methodologies.¹⁸ Helping individuals to discern between high quality and low quality online CAGS is a key part of building their digital career literacy. While concerns about the efficacy of astrology might be common sense, at the more subtle end of this discernment there are a range of highly technical questions about validation methodology that are likely to be beyond many individuals' knowledge. Professionals clearly have a role in recommending and advising on the value of different CAGS.

Even where individuals are using well validated CAGS there can still be dangers in unmediated access. CAGS tend to give simplistic answers to complex questions and are currently poor at recognising the context from which the individual is asking these questions. Consequently CAGS can be enhanced by being embedded in broader provision where professionals guide engagement with them and help individuals to unpick the recommendations that they make. Harris-Bowlsby (2013) makes the point that this kind of combination of CAGS and professional expertise may utilise online technologies to enable professionals to connect with clients at distance rather than face-to-face.

Automated career support

In addition to CAGS it is also possible to identify a range of more limited forms of automated support that address more technical concerns. There are a wide range of tools which offer help with building a CV usually by asking users to input information

(<https://www.ebscohost.com/us-high-schools/career-guidance-system>) and U-Explore (<http://www.u-xplore.com/website/>).

¹⁶ See Sofemine, Numerology: what's your career path

<http://www.sofemine.co.uk/astro/numerologie/07metiers/07metiers0.asp>.

¹⁷ See Mystic Scripts, Free career astrology horoscope by date of birth <http://www.mysticscripts.com/astrology/astro-profile/career-astrology/>.

¹⁸ See, for example, What career should you actually have? On BuzzFeed <http://www.buzzfeed.com/ashleyperez/what-career-should-you-have#.bt1mY95WD> for an example of this kind of pop psychology CAGS.

to a series of structured questions.¹⁹ Other examples of automated career support include things like salary calculators²⁰ which estimate your market value and benchmark salaries.

Games and simulations

In essence CAGS and other forms of automated career support seek to replace aspects of the role of the guidance professional. They facilitate exploration, reflection and occupational and job matching. For some clients they may replace the need for guidance professionals altogether, while for others they will be most effective when used in combination, allowing the guidance professional to focus on the higher skilled and less repetitive aspects of their professionalism. Automated interactions can also be used to provide new kinds of service provision that do not merely replace traditional practices, but rather extend them and allow new kinds of career learning to take place.

Games and simulations provide a good example of the way in which automated interaction can support career learning in new ways. Games and simulations provide an interactive way of exploring the worlds of learning and work (Maxwell and Angehrn, 2008; Betts *et al.*, 2009). Watts (2015) argues that simulations can provide a huge range of opportunities for career learning and the capacity of ICT to realise three dimensional environments provides an ideal vehicle for a wide range of simulations. Kelly (2014) demonstrates how gamification can be used to engage primary age children in career exploration with the *Paws in Jobland* resource.

Increasingly online games are also becoming a channel for communication between different players. Dugosija *et al.* (2008) identified that the range of career benefits that individuals acquired from participating in online gaming, included increasing their social and professional networks. Such opportunities begin to blur the boundaries between automated interactions and communications. Participants in multi-player online games are interacting with a mix of automations and real players. If such technologies can be harnessed for career learning they open up a range of opportunities for the creation of complex environments within which different aspects of career and work can be simulated.

The value of automated interactions

Automated interactions clearly offer a range of benefits for career guidance and should form an integral part of online career support systems. While automation is not likely to displace the value of the careers professional in the immediate future, it can supplement, extend and enhance what the professional is able to provide. The use of CAGS, other forms of automated career support and games and simulations in careers work are now well established and, particularly in the case of CAGS,

¹⁹ E.g. Reed, CV Builder <https://www.reed.co.uk/cvbuilder/>.

²⁰ e.g. Monster, Salary calculator <http://career-advice.monster.co.uk/salary-benefits/pay-salary-advice/salary-calculator/article.aspx>.

backed up by an evidence base. As will be discussed in more detail in section 9 the issue of how to blend these automated services into wider provision is critical.

Key questions

What forms of CAGS and other automated career support are currently used in Norway? How widespread is access to them? Is there a need for new tools or just for the extension of access to existing tools?

Are ICT based games and simulations being used to delivery career learning opportunities? Is there an appetite to extend the use of these tools?

How should automated interactions best be embedded in the practice of careers professionals?

7. Communications

There are a range of online tools that facilitate communication and interaction between people. Hooley (2012) argues that in some cases these online technologies have transferred offline practices such as talking and writing online. In others they have resituated other technologically-mediated forms of communication such as telephone calls into the online environment. And, many types of online communication have created entirely new modes of communication. The many-to-many social networks of Facebook and Twitter with their conventions of short personal updates and the sharing of photos, weblinks and resources have no direct offline equivalents.

The explosion of online modes of communication raises challenges when considering how to transfer forms of professional practice such as career guidance into the online environment. While it is possible to simply move from a one-to-one interaction in a room to a one-to-one interaction over a video conferencing systems this does not necessarily make the most of the affordances offered by the internet. The process of reimagining career guidance as an online activity is already well underway with practitioners and systems designers coming up with a wide range of approaches to creating online communications that support individuals to develop their careers. It is possible to classify communication tools into three categories: those that facilitate one-to-one, one-to-many and many-to-many forms of communication.

One-to-one

Whiston *et al.*'s (1998) meta-analysis of career interventions suggest that the most effective form of career intervention is face-to face, one-to-one counselling. Such interventions provide an individual with personalised information, advice or guidance by a trained profession. Despite the effectiveness of this approach it also suffers from important limitations: it is dependent on proximity, is resource intensive and requires clients to seek out a particular kind of semi-therapeutic intervention. These limitations mean that it is important to find alternative ways to deliver services, whilst retaining many of the advantages of one to one interactions.

One-to-one career counselling has been successfully transferred to the telephone (Flederman and Watts, 2014) as well as online (Hooley, 2012). Haberstroh, Rowe and Cisneros (2012) discuss the creation of a virtual counselling and advising service within a university using chat software. Such a service translates many of the paradigms of face-to-face counselling into a text based online interaction. In South Korea a text based online counselling service is now part of the public career guidance provision. Similarly both Careers New Zealand and the eVejledning service in Denmark have developed a range of distance delivery services to provide advice and guidance via a helpline and online webchat which is supported by email and text communications. Such virtual services maintain guidance as an interaction delivered by a professional to a client and can make use of professional standards and other kinds of quality assurance.

One-to-one interactions with professionals are only one kind of interaction that can be enabled online. In research on online mentoring Hooley, Hutchinson and Neary (2014) explored the efficacy and quality assurance of mentoring programmes that put young people in contact with more experienced non-professional mentors online. This research identified that this kind of online relationships between individuals and a non-professional mentor could deliver a range of career benefit including helping participants to make career decisions and to positively change their learning and career behaviours. *Academos*,²¹ an online mentoring program located in Quebec which utilises social media, provides an example of this kind of online mentoring programme.

One-to-many/many-to-one

A second form that online communication can take is the establishment of a one-to-many/many-to-one interaction. In this kind of interaction an individual or organisation uses the Internet to deliver resources to target groups but critically provides opportunities for members of that group to engage with the creator of the resources directly. The use of blogs or YouTube is one form that these kinds of communications can take. More structured forms of e-learning where tutors work with large classes, such as webinars, offer an alternative approach to one-to-many communications.

Online one-to-many interactions have been less well used and theorised in the careers field than one-to-one interactions. In contrast, Hooley (2011) has described how one-to-many interactions characterise career blogging, while Brammar and Winter's (2015) discussion of the role of the tutor in their careers MOOC offers an alternative one-to-many/many-to-one paradigm. There is also practice using Facebook to deliver one-to-many interventions in both Denmark (Nygaard and Nielson, 2014) and England (Dyson, 2012).

Not all one-to-many services are based around linking career professionals to individuals. In South Korea a telementoring programme links employers to classrooms allowing students access to the world of work. Mentors connect through videoconferencing software and interact with school classrooms, answering questions posed by students and sharing job-related information.

The "Ask Me Anything" feature on the website Reddit provides another example of a many-to-one interaction. In this professionals make themselves available to answer a wide range of questions about their work and professional lives. It would be easy to imagine how such an idea could be included as a regular feature on a careers website.

The one-to-many paradigm offers a number of advantages as it allows for the transmission of information in an efficient way, whilst still allowing participants space to seek clarification and ask for more personalised forms of advice.

²¹ *Academos* (<http://www.academos.qc.ca/>).

Many-to-many

Many-to-many communication is increasingly enabled by a growing diversity of social networking platforms such as Facebook, Twitter and LinkedIn in which users create, upload and share content with others on a global scale. Social networks can be accessed or restricted according to membership create communities regardless of geographic location.

For career guidance services there are two key questions: (1) should the public sector intervene in places where many to many networks already exist; and (2) should careers providers seek to construct and popularise many-to-many networking? Raftree (2013) describes the creation of a bespoke careers network platform as one component of an entrepreneurial focussed youth programme in Africa. These platforms are closed spaces which allow young people to meet and interact online as well as share ideas and projects in order to establish a positive community around both onsite and online locations.

As discussed in section 5 the internet allows for the widespread creation and dissemination of information. Users can to promote and highlight content by 'liking' it and to organise this content using folksonomies created by tagging content. This potentially puts users in the position of producing and co-producing online careers content rather than merely consuming it.

In answer to our first question about whether careers services should intervene in existing many-to-many networks it is worth thinking about some examples of how this might operate. Many social technologies such as YouTube and Instagram enable users to create and distribute information. For example, video career narratives can be created, distributed on Youtube and disseminated via Twitter. Such content is not quality assured and as a consequence may include material that is factually incorrect or deliberately misleading. Where user communities do develop there is also a lot of potential value as it expands the range of information available to citizens. Consequently the creation of such content offers resources which careers providers may choose to promote, to ignore or to warn citizens against.

Another opportunity for careers services to engage with user communities is around hashtags. Hashtags are found on sites like Instagram and Twitter which allow postings on a similar subject to be gathered together to create a temporary community of practice. For example, the viral campaign #thisiswhatascientistlookslike on Twitter was intended to raise awareness of women in STEM subject but also raised awareness of science careers. It would have been possible for careers service to use this hashtag to market their services and engage with a wider audience.

In relation to the second question about whether career services should actively seek to create many-to-many user environment it is also worth looking at practice that has developed around hashtags. Organisations have created hashtags linked to campaigns that they are running to heighten awareness about issues or services that are provided. For example, in the UK, careers professionals organise a National Careers Week using the #nationalcareersweek hashtag to highlight awareness about career guidance in the country. The hashtag allows the campaign to be promoted on

social media and for people who are not part of the core organising team to contribute to the campaign, show their support and to promote it.

It is also possible to use the hashtag approach to create many-to-many environments within which mentoring and peer support can take place. For example, the UKCES launched a hashtag campaigns called #notjustmakingtea (which tried to break down negative perceptions about work experience) and #thanksforthebreak (which encouraged people to talk about who had given them career opportunities).²² These campaigns were designed to encourage the development of a public career conversation rather than to deliver services as such.

Strategies for careers communications

The concept of meaningful interpersonal communication is strongly embedded in the practice and ideology of career guidance. Despite concerns about the viability of online career communication there is evidence that suggests that various forms of careers practice can be transferred online. The affordances offered by the internet also opens up opportunities for new forms of practice. Many of these new approaches are emergent, but there is already some evidence that they can be used effectively.

Key questions

What forms of online careers communication would be valuable in the context of Norway?

How can one-to-one, one-to-many and many-to-many services enhance the delivery of face-to-face and other forms of online service provision?

²² For further information on these campaigns see <http://www.weareneo.com/our-work/ukces-strategy-digital-content-campaign/>.

8. Developing mCareer provision

Smartphone and tablet device use has skyrocketed creating a new market for downloadable content and software in the form of mobile applications. Norwegians are enthusiastic users of mobile technologies with GMSA Intelligence (2015) reporting that the country has 6.6 million mobile connections (for a population of 5.1 million). Two thirds of Norway's mobile connections are mobile broadband connections meaning that most Norwegians are able to make use of multi-media content and other data rich services. The fact that Norwegians are now carrying powerful internet-enabled computers in their pockets opens up a range of potential opportunities for learning and the provision of career support that are currently under-utilised.

There are two main ways to deliver online content to mobile phones. The first is by optimising a website for viewing on a mobile phone. This approach has wider accessibility but can be slow to load and difficult to use. An example is this is the Irish Careers Portal.²³ The second way is through the creation of a purpose built application (app). A mobile app is a piece of software designed to run on a mobile phone and it likely to be specific to an operating system e.g. iPhone, Android, or BlackBerry. Apps can be designed to deliver online content or to work offline and generally have higher usability than mobile websites.

Mobile technologies have several implications for both education in general and career learning in particular. The potential for mobile learning, also known as mlearning, has yet to be fully capitalised (Chen et al., 2015) but it already opens up opportunities to situate learning in a variety of contexts not limited to the classroom (Hooley, Hutchinson and Watts, 2010).

Parsons (2014) discusses five key features of mlearning:

- **Places learning in a specific context.** Learning can now take place in any context; locations become meaningful through tech-based learning.
- **Augments reality with virtual information.** Virtual simulations can overlay and interact with physical locations.
- **Contributes to shared learning resources.** Learners and educators can together create and share material.
- **Places an adaptive learning toolkit in hand.** There are emerging capabilities of the mobile device along with its current capabilities. It can act as a compass, flashlight, instrument and measure distance.
- **Allows learner to take ownership of learning.** Learners are now able to personalise their own learning experience.

Mobile apps have been used to support learning in a variety of ways. There is a growing literature on mlearning which suggests that it can be effective with a variety of cohorts and in a variety of contexts (Abachi and Muhammad, 2014; Evans, 2008). An example is offered by Wales Deanery which used mobile apps to assist in

²³ Careers Portal, mobile version (<http://mobile.careersportal.ie/>).

delivering quality medical and dental education to newly qualified doctors working in clinical settings (Bullock, *et al.*, 2015). The programme was found to be successful in improving new doctors' confidence as well as another resource for doctors to find medical information. The app, however, did not fully replace seeking advice from other doctors and consulting physical books when appropriate.

The role of mobile technologies in career guidance

The use of mobile technologies is growing in career guidance. Five years ago Hooley, Hutchinson and Watts (2010b) reported that there was little use of mobile technologies in the careers field. Now many public sector careers providers are offering mobile services as a core part of their career provision or are planning to introduce such services imminently. For example, the myfuture website in Australia is accessible via a mobile site and in South Korea the contents of CareerNet (the public sector careers website) are accessible via mobiles alongside access to text-based online career counselling and peer support. In New Zealand the Maori Future Makers and NZQA's Understanding NCEA app is designed for mobile devices to help parent and employers better understand the National Certificate in Education Achievement (NCEA), which is the core qualification for secondary students. Careers New Zealand is website will be mobile friendly by the end of 2015.

Across the developing world mobile technologies have assisted in realising a variety of youth workforce development programmes (Raftree, 2013). A review of mobile youth workforce development programmes shows how mobile technologies can be intertwined into a wide range of youth interventions. These include using mobile technologies to:

- provide access to job search and matching systems;
- facilitate young people to find short term, task-based work;
- enable the formation and development of career communities around shared interests; and
- support private career exploration.

Raftree (2013) states that while mobile technologies can be effective in supporting youth and career development interventions several caveats should be considered when using these technologies. These include recognising that the quality of the programme is more important than the medium of delivery (i.e. via mobile technologies); blended learning is most effective; SMS²⁴ can help to reinforce learning; and the cost of technologies can be a barrier to participation.

Mobile technologies are also being extensively used outside of the context of any formal programmes. Searching for the term 'career' on Apple's app store delivers over 1000 results. Currently there are three main types of mobile apps available through this route.

²⁴ SMS = short message service or texting.

1. **Mobile CAGS.** There are also a number of apps which support individuals to reflect on their careers. One career learning app integrates psychometric testing into career planning. The iPQ Career Planner then gives ‘personalized development advice’ on career strengths and weaknesses to help give a better job interview. Harris-Bowlsbey (2013) discusses how the decades old tradition of Computer-Assisted Career Guidance Systems (CAGS) is increasingly being reconceived for mobile technologies to deliver “byte-sized” versions appropriate for smart phone use.
2. **Automated career support apps.** Some providers have adapted web based vacancy services to mobiles. Almost every high profile job search website in the UK has a mobile app. In the United States, several public sector organisations such as the Department of State and the National Security Agency have created job search apps for public sector jobs. Other mobile innovations in the job search app include applying usability features from other mobile apps to job search. For example, Savvy²⁵ is an app directed at women where they are able to set up a profile with salary requirements, benefits and incentive preferences and what the user would like in terms of company culture. The user can track job matches and see employers that view their profile. Other apps boast Tinder-like swiping features for job search including Switchapp.²⁶ Many of these apps can tap into the users’ geo-location to find opportunities that are locally available. Other apps help individuals to manage the recruitment process offering resume builders and interview preparation tools. One app, Interview Pro,²⁷ poses users with over 80 common interview questions. Some apps such as Monster.com Interviews²⁸ take the user throughout the job interview process by offering resources for the individual to use pre-interview, on the interview day and post-interview.
3. **Mobile networking.** There are a variety of mobile networking apps designed to support career development. These include things like Business Card Reader²⁹ which can import contact information from a picture of a business card in order to support ongoing relationships and networking. More typically they offer a way to connect to professional contacts through mobile versions of sites like LinkedIn.

Mobile technologies are an emergent area for career guidance, but one where considerable innovation is taking place. There are already several larger scale innovations using mobile technologies occurring in the public sector to help youth engage with the world of work as well as a large number of apps in the marketplace designed to support individuals in their career development.

²⁵ See <http://savvy.jobs/>

²⁶ See <http://www.switchapp.com/>

²⁷ See <https://itunes.apple.com/us/app/interview-pro/id308069187?mt=8>

²⁸ See <https://itunes.apple.com/us/app/monster.com-interviews-by/id426634637?mt=8>

²⁹ See <https://itunes.apple.com/us/app/business-card-reader/id328175747?mt=8>

9. Blending services

It is easy for discussion of digital services to become polarised between those who advocate for online services and those who argue for face-to-face services. In reality this is an increasingly false opposition. We live in a blended world in which face-to-face and digital experiences are often brought together. As a result it is important that any digital career service gives careful thought to the integration of digital and non-digital services.

Understanding the blended world

The development of peripatetic digital technologies of the kind described in section 8 of this paper raises the possibility for new types of lived experience. Individuals are no longer either online or onsite but are frequently inhabiting both of these spaces at the same time. At times these can compete for our attention such as when we check our mobile phones during a meeting. At other points the online and the onsite can interact and complement each other.

The internet is not an alternative space to the physical world, but rather one that complements it and interacts with it. So people create Facebook³⁰ accounts primarily to serve their existing social network with whom they originally interacted in a face-to-face context (Ellison, Steinfield and Lampe, 2007). Facebook maintains this social capital in an efficient way that keeps open the possibility of future interactions of both an online and onsite nature. Similarly online dating services are not about creating *online* relationships, but about creating ways for people to create *relationships* which may be pursued both online and onsite. The medium matters, shaping the way in which romantic relationships unfold (Ramirez, Fleuriet and Cole, 2015). The development of hook-up apps like Tinder³¹ has demonstrated that such blended technologies have the potential to shape people's behaviour in new ways.

Blending online and onsite experiences has also impacted on career behaviours. For example, academics and other groups of professionals have been using social media such as Twitter³² as a '*back channel*' at conferences for a number of years (McKendrick, Cumming and Lee, 2012; Reinhardt, Ebner, Beham and Costa, 2009; Ross, Terras, Warwick & Welsh, 2011). In such circumstances professionals engage with the conference as usual: listening to lectures, asking questions and engaging in peripheral networking activities. Alongside these face-to-face interactions there is also a parallel online interaction where people are also discussing the content of the conference and engaging in informal networking activities. In the face-to-face interactions only one person can speak at a time, the presenter dominates the discussion and sets the agenda and opportunities for interaction are limited. In the

³⁰ Facebook (<https://www.facebook.com/>) is the leading social networking site in the Western world.

³¹ Tinder (<https://www.gotinder.com/>) is a dating app which has allegedly increased the number of low commitment sexual relationships amongst young people.

³² Twitter (<https://twitter.com/>) is a real time microblogging platform that can be used to exchange news, information and other communications amongst loosely networked groups.

online interactions none of these limitations apply. Everyone can be talking at the same time, critiquing, supplementing and resisting the agenda set by the presenter and constantly interacting. This kind of many-to-many interaction can be celebrated as democratic or resisted as chaotic, but when combined with a conventional set of face-to-face interactions it shifts the nature of professional conferences. This is an example of a blended experience in which face-to-face interactions combine and intertwine with digital ones and in which both the physical and digital spaces are important.

The creation of products like Google Glass promises to take this kind of blended reality to a new level. Google Glass is a wearable device which displays information on the internet as an augmented reality. Google Glass users are encouraged to combine physical and digital realities and this in turn creates new opportunities for the delivery of services and products.

Figure 2: Google Glass wearer³³



Google Glass and similar products have been slow to reach the commercial market (NBC, 2015) but other augmented reality products have already entered the mainstream through a range of commercial smartphone apps. As can be seen in Figure 3 such tools create a digital layer which interacts with physical reality, potentially describing or analysing it. The example given in Figure 3 is of a map overlaid across a physical space but there are many more examples of such blended realities. It is possible to use such tools as a virtual tour guide providing information about buildings and landmarks, for gaming purposes, and a virtual shop assistant which can provide digital information on physical products.

³³ Image reproduced from https://commons.wikimedia.org/wiki/File:A_Google_Glass_wearer.jpg under a Creative Commons license.

Figure 3: Augmented reality on an iPhone³⁴



Such developments clearly offer new opportunities for work and learning. Weekes (2014) discusses the career opportunities associated with augmented reality technologies arguing that it will create jobs in a range of commercial, industrial, retail, military, entertainment and education sectors. It is equally likely that the development of these types of technologies will threaten other jobs and deskill still more. The ability to bring the power of the internet to bear within physical spaces has the potential to reduce the economic value of the kind of local knowledge that is the basis of many occupations such as retail assistants, taxi drivers and tour guides (Ford, 2015).

Blended technologies therefore shape much of the way in which we live our lives. Inevitably this has implications for how individuals' careers unfold. This is likely to impact on both the shape of the labour market (creating new jobs and requiring new skills) and the way that individuals access and position themselves within the labour market (creating the need for new CMS as discussed in section 3 of this report). Blended technologies also offer opportunities for learning and career development that may need to inform the development of digital career services in Norway.

³⁴ Image reproduced from https://commons.wikimedia.org/wiki/File:MediatedReality_on_iPhone2009_07_13_21_33_39.jpg under a Creative Commons license.

Blended learning

Educators have been using a variety of technologies in combination with face-to-face teaching and learning for decades. The use of textbooks, audio and video material and a variety of other self-study resources all predate the creation of the world wide web and prefigure many of the blended approaches that have been popularised since. The creation of the web and its adoption by academics and other providers of learning and content shifted the nature of self-study resources from the early 1990s. Before this teachers had to generate resources and find ways to disseminate them. Following the creation of the internet learning resources were readily available to both learners and teachers.

The term 'blended learning' began to be used from the late 1990s onwards to describe a wide range of different ways of combining face-to-face learning and teaching with online learning and teaching (Friesen, 2012). There is a well-developed body of practice and theory that has explored what kinds of blends are most effective for students (see Bonk and Graham, 2012). A meta-analysis by Means, Toyama, Murphy and Baki (2013) found that there was good evidence that online learning could deliver similar learning outcomes to face-to-face learning and that blended learning (the combination of the two) could achieve better outcomes than either mode on its own.

Staker and Horn (2012) set out a taxonomy of different forms that blended learning can take.

- **Rotation model.** Teachers and students rotate between modalities during learning in a purposeful way based on a clear instructional design. For example, students might spend time researching a topic online before coming together for a class discussion.
- **Flex model.** Most teaching and learning is provided online, but students are able to access teacher time in a flexible way to meet their individual learning and support needs. For example, a student might seek out a face-to-face meeting to discuss a topic that they are finding challenging.
- **Self-blend model.** Students study core learning face-to-face and then access additional learning opportunities online. For example, a school might offer a core curriculum face-to-face and then offer students opportunities to choose from a wide variety of online modules.
- **Enriched-virtual model.** Learning primarily takes place online but with strategically positioned face-to-face touch points.

Blended learning approaches are becoming increasingly common internationally in schools (Staker and Horn, 2014), universities (Graham, Woodfield and Harrison, 2013) and professional and corporate learning (Matzat, 2013; Thoms, 2013). There is also considerable evidence of blended learning practice in Norway (e.g. Olsen and Horgen, 2013; Rosenbaum, Mikalsen and Grahl-Nielsen, 2012; Rosenbaum, Mikalsen, Lygre, Solheim, and Schjøtt, 2012). In New Zealand Competenz³⁵, an

³⁵ Competenz (<http://www.competenz.org.nz/>).

industry training organisation, delivers blended learning for engineering apprentices via e-learning modules. As a consequence it is reasonable to think that users of guidance services will be increasingly likely to come to these services with prior experience of participating in blended learning and an anticipation that blended approaches will be used.

Blended guidance services

This section has so far discussed the way in which individuals experience the world through a blend of online and offline experiences. Also discussed was the range of practice, theory and research that exists around blended learning. Both of these discussions provide a context for the development of guidance services in Norway. Alongside these discussions it is important to recognise that traditions of careers work exist in face-to-face, telephone (see Flederman and Watts, 2014 for a summary of this tradition) and online paradigms. As Norway strategises the next phase of the development of its services there is a need to consider how all of these might lead to some form of blended service delivery.

In the UK, DBIS (2014) have found that different people are more likely to access different services be it face-to-face, telephone and web career guidance services and that the type of queries that are addressed to each of these channels are different. Such findings highlight the value of organising service delivery around a blended multi-channel paradigm to allow people to access different kinds of services depending on where they think they will best find what they need and their own capacity to use the different channels. People are increasingly buying goods and services online, with many businesses offering a blended service that includes elements of face-to-face, telephone and online provision with customers switching between these channels as they access services (see Cortiñas, Chocarro and Villanueva, 2010; Peterson, Gröne, Kammer and Kirscheneder, 2011; Seck and Philippe, 2011). In fact many people prefer to access services at a distance even where they have the opportunity to receive them face-to-face (Reese, Conoley and Brossart, 2006).

Innovative practice in relation to the blending of services can be found in South Korea where schools use QR codes³⁶ to link communications to parents to online resources. Another example from New Zealand uses a mixture of videos and conventional delivery to profile inspirational Māori people to inspire career decision making.

In the UK the multi-channel approach to service delivery has also been influential in the delivery of a range of publicly funded services. This has been reflected in the approach that has been taken in the National Careers Service which offers a wide range of services including face-to-face advice and guidance, telephone, web and social media services. At present while England's National Careers Service offers a strong example of the multi-channel provision of careers services, it offers a rather

³⁶ A QR code is a machine-readable code consisting of an array of black and white squares, typically used for storing URLs or other information for reading by the camera on a smartphone.

weaker example of a blended service. At the heart of the blended conception is the concept of integration, mutual reinforcement and strategic deployment of modalities. Realising such a conception has proved to be difficult across all of the international examples we have looked at.

Models of blended guidance

One of the challenges in realising a blended career development service is the lack of a clear model for how such a service might be organised. It is possible to iterate Staker and Horn's (2012) taxonomy of blended learning to explore different ways in which blended guidance services might be organised.

Figure 4 conceptualises Staker and Horn's model across two axes. Firstly, it organises approaches to blended services by whether they are primarily face-to-face approaches or primarily online approaches. Secondly, it looks at how far the blending of different modalities is done by the professional as part of instructional design and how far it is done by the individual to meet their specific needs and preferences.

Figure 4: Conceptualising a model of blended careers practice

	Primarily face-to-face	Primarily online
Professional led	Rotation model	Enriched-virtual model
Client led	Self-blend model	Flex model

Rotation model. Career guidance is delivered primarily in a face-to-face paradigm but with a clear awareness of the opportunities offered by the online environment. Participants in guidance are offered opportunities to use online resources and supported to increase their capacity to use such resources. Sampson and colleagues have theorized this process across a number of articles (e.g. Sampson, 1999; Osborn, Dikel and Sampson, 2011). They view the career practitioner as performing a triage function, identifying which clients can be supported through which means and helping them to identify which resources will be useful.

Flex model. Access to career guidance is provided primarily online, but participants have the opportunity to access face to face support where this enhances and supports this online provision. León and Castro (2014) describe how this approach was effectively adopted within a Spanish music conservatoire to deliver an online career education programme which included virtual interactions with employers. Students were able to access teacher support and to participate in face-to-face sessions to supplement these online interactions.

Self-blend model. A wide range of online guidance resources are developed (perhaps relating to particular occupational fields). Face-to-face time is spent developing core career competencies and introducing participants to the wide range of resources with which they can engage.

Enriched-virtual model. Guidance services are delivered primarily online but with strategically positioned face-to-face touch points.

This typology of blended guidance services may be useful in shaping the design of services within Norway. It is not intended to suggest that only one form of blend can exist, but rather to argue that conceptualising the way in which services are blended clearly is likely to be essential to achieving a genuine integration between different channels.

How these different models of blended guidance are operationalised will depend on the delivery infrastructures is designed. For example, will the same practitioners who are seeing clients face-to-face also take telephone calls and answer email queries or will a specialist call centre be created (as in England) to deal with this channel. It is possible to characterise these different forms of service delivery as either a melting pot (where all services are connected organisationally) or a salad bowl (where services co-exist and complement but are not formally joined).

Whatever approach to service design is taken it is important that the following principles are taken into account.

- **Interoperability.** Different channels should be able to work together, share data and provide a service which is greater than the sum of its parts.
- **Referral.** Users of the services should be guided around the different channel to help them to find the forms of support that are most appropriate and useful to them.
- **Equivalence.** While the experience of using each aspect of a multi-channel service will be different it is important that the quality is consistent.
- **Strategic management.** In order to ensure the effective co-ordination of multi-channel services it is important that there is strategic management of these services capable of monitoring and developing the way in which the blend works in practice.

The role of e-portfolios

An important tool that is used in a range of blended learning models is the e-portfolio. E-portfolios provide an online space for individuals to store information about themselves and their careers. Portfolios are often integrated with CAGS and allow individuals to store results from career assessments alongside reflections and evidence that may be useful for their career building. The use of e-portfolios is usually part of a blended delivery and they can be used as part of the assessment of career managements skills courses (Barrett, 2012).

In a review of 15 countries use of new technologies in guidance Kettunen and Vuorinen (2015: 2) concluded that many countries have started to use e-portfolios 'as an integrated feature in a comprehensive model for career development and the acquisition of individualized learning plans for all students'.

The role of practitioners

Career practitioners are critical to making blended models work effectively. Blended models require users to become familiar with the whole offer that exists online and onsite. Career practitioners need to fulfil three main roles to make this happen.

1. Educating the users of guidance about the full range of career support that they can access. Practitioners need to become advocates for multi-channel career services and encourage and empower citizens to make use of them.
2. Referring their clients to other channels where this will help them to access ongoing career support.
3. Using online resources as part of the delivery of their face-to-face services. For example, this might include showing someone how to find information online as part of answering one of their questions in a guidance session.

The critical role that practitioners have in realising multi-channel and blended guidance services means that they need to be both engaged in their use and empowered to make use of them. It is important that practitioners perceive new technologies as complementary to their professionalism and an extension to it rather than as competition to it. There are a range of ways in which this might be achieved, but it is likely to involve changes to initial training, continuing professional development and codes of practice and ethics.

Existing practitioners offer a resource for those responsible for managing the new online and telephone services. In addition to their roles in advocating, referring and using the new services they also have a wealth of knowledge and expertise that could be used in the creation of online services. One opportunity would be to view existing practitioners as the authors and reviewers of content. The social web has enabled the creation of user generated and user reviewed content. At its most impressive this has underpinned the creation of sites like Wikipedia which challenge professionally authored sites for accuracy and outstrip them in terms of coverage. It would be possible to have sections of online products which are authored by careers professionals and which capture their expertise about their localities and client groups. This approach would also help to engage practitioners in the use of the site.

Key questions

How far are other Norwegian public services offering a blended multi-channel service? How does this compare to key private sector services such as banking or retail?

What models of blended learning existing within Norway that might be useful in informing the development of career guidance services?

What channels will be created as part of the development of digital career services in Norway?

How will these channels be integrated and blended?

What will the role of practitioners be in ensuring that the blend is effective?

10. Career policy for the digital future

This report has demonstrated that digital technologies offer a wide range of opportunities for career guidance services. Across the world these opportunities have been taken up and utilised to deliver a myriad of career guidance services. There is a growing evidence base that supports these practices and which provides insights into how they can best be delivered.

Governments across the world are interested in career guidance. Many governments have made substantial investments in the development of these services but they have not had a monopoly on the development of such services. Many other stakeholders have also contributed to the growth of the online career support environment. Private providers have frequently demonstrated an ability to offer services that are both more innovative and more enduring than those developed by government. In addition there are a wide range of stakeholders who are providing resources which are useful to individuals (e.g. information on learning or work opportunities) but who have no interest in providing career guidance as such. Many of these providers are simply conducting their businesses, recruiting students or staff, in the most effective way that they can find. Such activities frequently have a positive knock on effect for career guidance.

The online career environment is international and highly complex. It contains public and private providers; sites dedicated to career guidance and those where this is an incidental function; resources aimed at individuals; career professionals; educational organisations and businesses. Invariably these different actors all interact and overlap. Because of this Hooley, Hutchinson and Watts (2010b) argued that it was helpful to view online careers services as a market. Such a conception is useful because it recognises the wide range of actors who can play a role in online careers provision but also highlights the fact that such actors are likely to have their own motivations for participating in the market which are related to the needs of their businesses.

The conception of the online career environment as a market can be a challenging one for providers of public services. A conventional public sector response might be to establish a comprehensive public website which largely ignores the resources available in the wider environment. Public sector providers of careers services are not used to competing for customers against the private sector and are typically highly committed to principles like impartiality and client centeredness. Many of the private sector products available neither seek nor purport to offer such values. Despite a lack of impartiality, such resources may still be useful to individuals. Because of this we believe that the concept of the online market in careers provision accurately describes the reality of the online career environment and provides a basis from which policy can be formed.

11. A framework for policy

Given the conceptualisation of online careers provision as a market it is possible to describe four main roles for public policy (drawn from Hooley, Hutchinson and Watts, 2010b).

1. **To build the digital career literacy of the population.** This will enable them to be effective consumers within this online market. Such provision should seek to educate them about the nature of the market and the different players in it, to understand their motivation and to develop tools for assessing the provenance and usefulness of different tools.
2. **To stimulate the development of the online market in careers provision.** The existence of a wide range of products and services is in the interest of the individual. It offers them choices in what tools to use and extends the range of support that they can access. In the context of Norway the market is likely to be smaller and less developed both because of the size of the country and its relatively weak tradition in career guidance. Government may therefore wish to explore ways to stimulate its growth and coverage.
3. **To quality assure the online market in careers provision.** Despite the advantages of having a wide range of online career support services there are considerable dangers in having an unregulated market. Governments need to investigate and invest in mechanisms that can increase consumers' confidence in the market and prevent inaccuracy, misinformation and other forms of poor practice.
4. **To compensate for market failure.** The evidence suggests that the market will not provide equally for all individuals and all sectors of society. Online careers services are far more likely to serve high skilled workers, graduates and other relatively advantaged groups than unemployed workers, low-skilled workers and other relatively disadvantaged groups. Consequently the government has a role in monitoring the extent and nature of provision and providing services that address areas where the market fails to provide.

This framework provides a conceptual basis for policy development. The next section sets out a series of practical actions that the government in Norway may wish to consider in taking forward its provision of online career support.

Policy actions

This section sets out a series of possible policy actions that should be considered in the development of Norway's policies on online career development.

Developing digital literacy

Following the 2015 symposium on career development and public policy the ICCDPP (2015) issued a communique which argued that: '*Governments need to establish and support the acquisition of a baseline of digital literacy for all citizens. This should include digital career literacy which provides people with the skills they need to build their careers in the digital world.*' We would endorse this and argue that this should

be one of the primary responsibilities of government with respect to the development of an online career support environment in Norway.

Key actions might include:

- building digital career literacy into the development of Norway's proposed career competency framework;
- developing resources that support individuals to acquire digital career literacy through self-study, interaction with career professionals and services and the wider education system;
- ensuring that publicly funded Norwegian career services work with individuals to develop their digital career literacy; and
- building an understanding of digital career literacy into the training of career professionals in Norway.

Stimulating the market

This research has not addressed the size or nature of the existing Norwegian online career support market. There may be value in commissioning additional research to investigate this in more detail as part of the policy development cycle although given the size of the country, its language and the recent development of career guidance this market may currently be relatively small. Consequently the government may seek to stimulate the growth of this market through a range of mechanisms.

Key actions might include:

- funding innovation and the development of products and services;
- developing underpinning resources such as the UK's LMI for All resource which enable developers and careers providers to build services on top of a public sector infrastructure; and
- exploring the business models of existing private sector online careers providers in Norway.

Quality assuring the market

The internet opens up access to both the best in human culture and knowledge and the worst. Within the careers field this means that well validated, usable, consistently updated websites based on good research sit side by side with incoherent nonsense. While citizen's digital career literacy is the ultimate guarantor of accessing useful provision there is an important role for government in signposting the good from the bad. However, online quality assurance is notoriously difficult and is likely to require a combination of approaches.

Key actions might include:

- developing national approaches to quality assurance. For example it might be possible to draw on the UK's matrix Standard to provide a method of formally quality assuring and badging quality online career guidance services. The ELGPN (2012) quality assurance and evidence base framework provides a useful resource for development and approached to quality;
- ensuring that the development and use of digital resources is included in the code of ethics of career professionals in Norway;

- ensuring that initial training and CPD of career practitioners addresses the use of digital resources. If the aspiration is to create an integrated multi-channel service there is a need to train practitioners and to support them to make use of the new technologies as they become available. Bimrose, Barnes and Attwell (2010) have noted, even where careers professionals have good ICT skills they often lack models about how best to employ these skills in the context of career guidance. There is some evidence that new technologies can be effectively employed in the training and CPD of career professionals (Yates, 2014)..
- the development of digital resources could also include options for quality assurance via an informal peer review system whereby practitioners could 'like' or show support for certain content which has been uploaded by other users. Such a system could validate the level of quality and usefulness of the content for career explorers. The system could also be extended to allow careers explorers themselves to 'like' or show support for content (differentiated from practitioners support) if they found it useful, enabling content to have two types of quality assurance. Inspiration for such a system could be drawn from the website Pinterest which is a personalised media platform which categorizes digital content for users in one place. Pinterest allows registered users to bookmark images and other digital content onto digital 'pin boards'. Users have the option of generating their own image 'pins' to collate content into central themes on different boards. In addition there is a 'pin feed' which shows the most popular pinned images which can be saved by users by 're-pinning' to their own personal boards increasing the likelihood of that pin appearing on the 'pin feed'. Using a similar idea digital careers resources could be developed to encourage more user generated content and enable that content to be verified by both practitioners and the career exploring citizens that benefit from the content.
- developing and disseminating the evidence base on the use of digital technologies in career guidance.

Compensating for market failure

Even in well-developed online career support markets like England and the USA there are large gaps in provision. The market will not solve the issue of how to provide online career support, although it will make a valuable contribution to it. Consequently the government has a role in understanding this market and compensating for its failures.

Key actions might include:

- ensuring integration and coherence in provision. An unregulated market is likely to produce regular overlaps and duplications; it is also unlikely to provide a coherent and integrated framework. One important role for government is to provide resources that help individuals to understand what exists and how these resources might be combined together usefully;
- identifying and addressing areas that are not covered by the market and seek to fill these gaps.

Conclusions

Online and digital technologies offer enormous value to career guidance services. We live in a digital world in which learning and work have been transformed by new technologies. Career guidance needs to take account of this changing reality and actively address it. A key element of this is working with individuals to develop their digital career literacy.

New technologies also offer considerable opportunities for the delivery of career services. We have argued that these are most helpfully conceptualised as relating to the provision of information, automated interactions and forms of communication. There is a wide array of international practice that speaks to how these approaches can be operationalised and a growing evidence base which addressed what is most effective. The paper also explored the role of mobile technologies and of blended delivery, where face-to-face careers services make use of digital technologies in the delivery of career support.

Finally the paper explored the role of policy. The argument is made that the provision of digital career support is helpfully conceived as a market. Within this market the state has four main roles: to develop citizens' digital career literacy; to stimulate the functioning of the market; to quality assure the market; and to compensate for its failures.

Norway currently has the opportunity to address these issues in a more strategic way than many of the countries discussed in the case studies. It is hoped that this paper has been helpful in the development of this strategy and that Norway is able to go on to establish a world class career guidance system.

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Appendix: Case Studies

This appendix sets out the findings from ten case studies undertaken as part of the authoring of this paper. The case studies cover: Canada, Denmark, England, Germany, Ireland, Italy, New Zealand, South Korea and Spain. The countries were chosen to represent a range of English speaking and non-English speaking countries which have interesting or promising practice in relation to online careers provision.

For the purpose of comparison there are a series of national case studies covering online careers provision collected in 2010. These case studies cover Canada, Germany, the Netherlands, New Zealand and the USA and are published in *Enhancing Choice* (Hooley, Hutchinson and Watts, 2010b).

Canada

Careers work in Canada is co-ordinated in the provinces and territories. This means that online careers provision varies across the country although each province or territory has at least some online provision to support career building. A strong example of this kind of provincial provision is the Alberta Learning Information Service (ALIS) which provides online career and learning information to Albertans using a variety of formats and technologies.

At the federal level the government offers an online federal job bank and career finder which produces labour market information and job trends reports, and maintains the National Occupational Classification. An additional federal initiative is mobile app which supports students and teachers to assess their essential skills³⁷, specifically related to trades and technology careers.

Canada has a well-developed range of private providers offering technology-based career development solutions. Career Cruising is a well-developed CAGS that is widely distributed across schools, post-secondary providers and employment centres in Canada and beyond. Another private sector product is eVolve, which is a proprietary system developed by Training Innovations, a British Columbian career development agency. eVolve allows clients to access career related content and activities as well as connect with a career practitioner via asynchronous communication. Academos an online cyber mentoring program, offers another example of a Canadian online product. This is available in Quebec and uses social media to engage with youth.

Key publications and websites

Academos (<http://www.academos.qc.ca/>).

³⁷ See Employment and Social Development Canada (<http://www.esdc.gc.ca/eng/jobs/les//index.shtml>) for further information on essential skills in Canada.

ALIS (<http://alis.alberta.ca>).

Career Cruising (<http://public.careercruising.com/en/>).

eVolve (www.training-innovations.com).

Federal job bank and career finder (<http://www.jobbank.gc.ca/home-eng.do?lang=eng>).

Denmark

In Denmark new technologies are increasingly having an impact on the world of learning. There are a wide range of single subject courses from the High School degree HF (Højere Forberedelseseksamen) which are now accessible through e-learning. There are also several professional bachelor's degrees, Academy profession degrees and training programmes (for those that are already in work) offered via a blended learning model.

In January 2011, eVejledning (eGuidance) was launched in Denmark. eVejledning provides educational and career guidance to all people requiring advice on education and career choices. The main target group is young people in schools and vocational education. eVejledning provides users with the choice of talking with an advisor by phone, email, online chat or via text messages to assist with decision making about educational choices. eVejledning is closely linked to the Education Guide which is a digital guide to education in Denmark which provides information on public education at all levels, job descriptions, interviews and information about applying for education, as well as different tools to assist with course selection. Social media, especially Facebook and Twitter, are widely used by youth guidance centres and eGuidance (eVejledning) has two Facebook pages one aimed at young people and one for parents to provide targeted information about their services.

Key publications and websites

eVejledning (e-guidance) (<https://www.ug.dk/evejledning/eguidance-evejledning>)

Education Guide (<https://www.ug.dk/>)

England

Issues around the development of new technologies and their use in public services are highly important in England. The penetration of web and mobile technologies is very high although there are continuing issues with both digital exclusion and low levels of digital literacy amongst some elements of the population. The government has published a digital strategy and seeks to move the delivery of public services into a 'digital by default' paradigm.

Within the careers field the government has developed a range of products which provide career support including the National Careers Service which provides general online career support for both young people and adults. The National

Careers Service also provides a range of telephone and internet mediated advice and guidance services including a developing social media channel.

The government has sought to stimulate the growth of the online careers market in two main ways. Firstly it has provided short term funding to products like plotr (a youth careers website) to provide the initial capital to get ideas up and running. Secondly it has developed a range of underpinning products like LMI for All in which government funding is used to create resources which can be utilised by developers and careers companies to create new products and services.

England has a well-developed market in online and digital products. There are a wide range of providers who are creating both free to access and pay for access resources for individuals, educational providers and businesses in England. The government owned matrix Standard which quality assures careers provision in England has been developed to apply to online and web-based provision.

Key websites and publications

Government Digital Strategy

(<https://www.gov.uk/government/publications/government-digital-strategy/government-digital-strategy>).

LMI for All (<http://www.lmiforall.org.uk/>).

matrix Standard (<http://matrixstandard.com/>).

National Careers Service (<http://nationalcareersservice.org.uk/>)

Plotr (<https://www.plotr.co.uk/>).

Germany

New technologies have had a large impact on the lives of German people, developing new models of learning and work as well as providing new job opportunities. Almost all universities and many adult and distant learning courses use online e-learning portals (such as Moodle) which are increasingly accessed via smartphones.

The government works with the Federal States to promote digital skills and media literacy in all education fields. In order to use the opportunities of digital media for education, the federal government is developing a strategy for “digital learning” with the Federal States and other actors and stakeholders.

Since March 2015 the Federal Employment Agency offers a smartphone app (“BERUFE Entdecker”) for young people to find suitable vocational training to meet their interests and skills. This App features an overview of over hundreds of vocational training opportunities; provides insights into job tasks and expert knowledge via videos of trainees and professionals.

There is a nationwide online portal “planet-beruf” is assisted by print and CD media which are distributed to schools and are used in the career classes to increase the

use of the portal. The online portal is linked to other career initiatives like the Girl's Day or the Career Choice Passport.

Key publications and websites

The Digital Agenda 2014-2017 (http://www.digitale-agenda.de/Content/DE/_Anlagen/2014/08/2014-08-20-digitale-agenda-engl.pdf;jsessionid=0C35ADE7871EE1B3AC03A98728C131F7.s3t1?__blob=publicationFile&v=6)

BEFURE Entdecker app

(<https://play.google.com/store/apps/details?id=de.berufeentdecker.app&hl=de>).

Ireland

New technologies have changed the way that people live, learn and work in Ireland. E-learning is widely used within the education system and application processes for higher education are now online. Similarly it is common for employers to conduct interviews online using technologies like Skype and to test candidates for their ICT skills. The importance of digital literacy has been widely recognised as a desired outcome of the education system and a new digital strategy is anticipated from the Department of Education and Skills imminently.

The careers profession within the country has begun to embrace new technologies as part of the provision of guidance services. Practitioners are discussing issues of digital career literacy with their clients and delivering services through a range of different online and telephone technologies including the use of Facebook and other social tools. The country also has a well-developed range of online career, learning and labour market information sites such as Careers Portal which is funded through a public-private partnership as well as Qualifax the Department of Education provided national database of courses. These sites include a range of automated interaction which supports individuals to increase their self-awareness and explore possible interactions. Although some experimentation with various communication technologies is emerging across careers services in the country there is no systematic provision of a professional e-guidance system.

NCGE is the Department of Education and Skills agency that provides support for guidance practitioners in the education sector. The Centre co-ordinates and provided CPD for guidance professionals in schools and further education and training, in line with client needs and good practice guidelines. NCGE has developed an online Virtual Learning Environment to support provision of CPD using a blended learning approach. Through the development of the online Handbooks and NCGE website, NCGE provides resources and guidelines for good practice. Through CPD, and the NCGE News Online magazine NCGE has encouraged the use of ICT delivery of guidance services.

Key publications and websites

Careers Portal (<http://www.careersportal.ie>).

National Centre for Guidance in Education (2014). *NCGE News (A Spotlight on E-Guidance)*. 41. Available at: <http://twelvehorses.ie/ncge/news/summer-2014.html>

Qualifax (qualifax.ie).

Italy

In Italy careers providers largely use digital technology as a method for disseminating careers information about options for study, work and training as well as directing users to appropriate services. The project Jobtribu was implemented to explore how ICT development and social media could be used to improve Public Employment Services. The project tested how new technologies (such as video tutorials, skype interviews and twitter etc.) could be used and it was found that they could improve the access and quality of careers services.

An adequate offer of e-guidance services is not yet developed in Italy and most of providers manage the interaction with users through e-mail, forum and social networks. Recently, the project Job Tribu (www.jobtribu.eu) was implemented by some public institutions to explore how ICT development and social media could be used to improve Public Employment Services. The project tested how new technologies (such as video tutorials, skype interviews and twitter etc.) could be used and it was found that they could improve the access and quality of careers services. There is an online portal available via the Ministry of Education that offers information about schools and higher education courses via e-guidance with experts from the Ministry responding to queries via email. There are further web portals managed by individual regions or provinces to provide careers information and support. There is a widely used bespoke Italian CAGS called S.OR.PRENDO, which was established in 2013, and was modelled upon the English application Adult Directions. S.OR.PRENDO provides a database of careers and a career matching model. The software consists of two parts: firstly a database of professions that can help people to explore several careers and to understand variations among careers; and secondly an interactive matching system that links the interests and preferences of users with the characteristics of specific careers in the database.

There is more limited practice in relation to the provision of communication based online career support. However, the Youth Guarantee program in the Piemonte Region has begun to innovate in this area and to provide web seminars to ensure career support to young people who are not in education, employment or training (NEET).

Key publications and websites

Ministry of Education portal (<http://www.istruzione.it/orientamento/>)

S.OR.PRENDO (www.sorprendo.it)

Youth Guarantee Program (www.garanziaiovanipiemonte.it)

New Zealand

In New Zealand new technologies are becoming increasingly central within the delivery of careers information and guidance.

Careers New Zealand (CNZ) provides a free service through their website and can be contacted through a phone helpline and online webchat via the website www.careers.govt.nz. The career helpline and webchat service offered by CNZ is unique in New Zealand and is one of very few helplines operating in the 'non-crisis' area in New Zealand. In 2014/2015 25,681 career development activities were carried out via phone, webchat, email and text. Other examples of Government use of technology include the use of videos to profile inspirational Māori people.

There is strong interest in using mobile technologies for career guidance in New Zealand. An early example of this is the Maori Future Makers and NZQA's Understand NCEA app is designed for mobile devices to help parents and employers better understand the National Certificate in Educational Achievement (NCEA), which is the core qualification for secondary students. There are plans to develop more comprehensive mobile provision in 2016.

In education, the use of e-learning is widespread. Tertiary educational providers in New Zealand offer fully online or blended learning courses in many subject areas. Industry Training Organisations use technology to enable trainees to learn in their own time and pace. An example is Competenz, who produce e-learning modules for engineering apprentices.

The Ministry of Education's Enabling e-Learning Initiative aims to support schools in using ICT effectively to enhance student's learning. Enabling e-Learning brings together the latest information and professional learning resources via a dedicated space on Te Kete Ipurangi (TKI) and the Virtual Learning Network (VLN) community. The National Library - Services to Schools, has identified seven key themes important to the development of effective digital citizens, which includes research and critical thinking.

Key publications and websites

Careers New Zealand (www.careers.govt.nz)

New Zealand Report to the ICCDPP (2015) (<http://www.is2015.org/wp-content/uploads/2015/03/New-Zealand.pdf>)

Competenz skills for industry (<http://www.competenz.org.nz/apprentices/elearning/>)

Ministry of Education Enabling E-learning Initiative
(<http://www.vln.school.nz/profile/Enabling.eLearning>)

Maori future makers (www.maorifuturemakers.com)

South Korea

South Korea has a highly developed technological infrastructure. The use of new technologies is strongly embedded in Korean culture. As a consequence it has been quick to integrate new technologies into its career guidance provision.

Policy makers have strongly supported the development of online career guidance services. In 2014, around 50% of the government budget related to the development of career information was allocated to the development of web and mobile based services.

The country has developed CareerNet as the core of its national infrastructure in online career services. This provides career information for individuals and resources for schools and professionals. The country has also developed a text based one-to-one career counselling service which is delivered through CareerNet and an employer/schools telementoring programme. CareerNet services are also available through mobile technologies.

Key publications and websites

CareerNet (http://www.career.go.kr/cnet/front/eng/eng_home_new.do)

Spain

In Spain new technologies are being utilised in several ways to support education, work and training.

Educational Portals provides information about a wide variety of educational institutions. One example, Educaweb, provides information about 75000 educational resources including courses, official degrees and masters programmes. Global traffic to these portals is estimated around 35 million visits per years.

Several online portals also aggregate job vacancies and candidates' CVs to provide a job matching service the largest of which is Infojobs.

The Instituto Nacional de Empleo has developed the website "Empleate" with the objective to aggregate initiatives developed from different Comunidades Autónomas (regional governments) plus social/third sector and private initiatives.

There is considerable use of mobile technologies within the Spanish education system such as the mEducation initiative by the Mobile World Capital Barcelona and the mSchools app which supports students, parents, teachers and schools to enable new ways of teaching and learning using mobile technology. mSchools helps students build important new digital skills and prepare them for today's world. At present these mobile learning approaches have not been applied to the careers field.

A further initiative is The App Education course, which had over 12000 students enrolled in the 2014-2015 school year, and offered a computer service elective in

Catalan High Schools. The course focuses on the design and creation of apps for mobile devices, promoting team work in the classroom and encouraging entrepreneurship spirit amongst students as well as improving student's digital skills.

Key publications and websites

Educaweb (<http://www.educaweb.com/orientacion-online/>)

Empleate (<https://www.empleate.gob.es>) Job matching portal (www.infojobs.net).

mSchools (<http://mobileworldcapital.com/programmes/mschools/>)

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