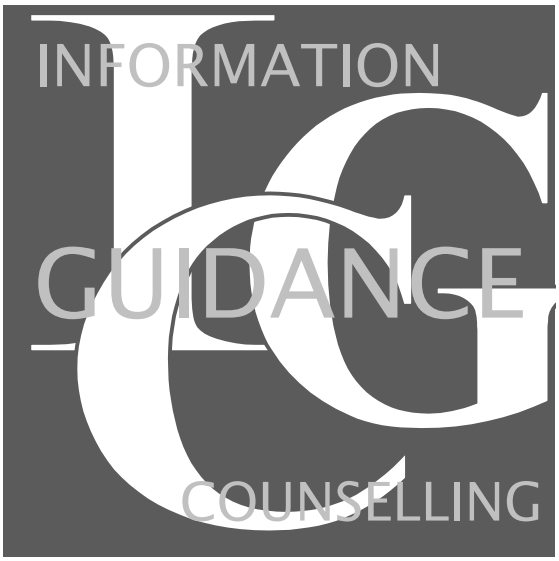
THE ROLE OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN AN INTEGRATED CAREER INFORMATION AND GUIDANCE SYSTEM



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ABSTRACT

- ICT is used extensively in the delivery of career information and guidance. Such usage covers a wide range of applications.
- Key trends include its increased accessibility, its increased interactivity, and the more diffused origination of ICT-based resources.
- The role of ICT in guidance can be seen in three ways: as a tool, as an alternative, or as an agent of change. The growth of websites and helplines as forms of technically mediated service delivery means that the potential of ICT as a change agent is now greater than ever before.
- The telephone, websites and e-mail, alongside face-to-face facilities, could be alternative services; or they could be portals into a wide, flexible and well-harmonised network of services. Public policy may support or impede such harmonisation.
- The potential roles of public policy in relation to ICT-based guidance and information provision include funding such provision as part of their general funding for guidance and information services; or confining their role to funding areas of market failure and/or to quality assurance.

1 INTRODUCTION

Information and communication technologies are transforming career information and guidance services, just as they are transforming service delivery in other sectors (e.g. banking and health services). This poses major issues for policy-makers. To what extent can investment in ICT enhance the cost-effectiveness of services? Should investment in ICT be viewed as an alternative to face-to-face services, or as a means of enhancing the quality of such services? What are the respective roles of government, of career guidance professionals and of the private sector in promoting the application of ICT within this field?

The present paper addresses these and related issues. It starts by examining the evolution of ICT and the ways in which it is currently being used in the delivery of career information and guidance services. It then looks at the types of clients with whom ICT-based systems are particularly used, and at how such systems can both expand and restrict access to career information and guidance. It next explores ways in which ICT can complement and/or be integrated with other ways of providing career services. Finally, it identifies a number of key policy issues relating to the role of ICT in national and regional career information and guidance systems.

2 EVOLUTION

The evolution of the application of ICT in the field of career information and guidance can be divided into four phases. The first was the *mainframe* phase, from the mid-1960s to the late 1970s. A number of computer-aided guidance systems were developed which demonstrated the potential of ICT. But the costs of direct interaction with the computer meant that the only systems which proved widely practicable in cost terms were based on batch processing. The static nature of this process and the feedback delays limited the implementation of such systems.

The second was the *microcomputer* phase, from the early 1980s to the mid-1990s. The advent of the microcomputer made interactive usage much more economical, and also made it easier to develop and market limited software packages; its attractiveness grew as more powerful versions of the personal computer were developed. The result was a substantial growth in the number of computer-aided guidance systems, and in the extent of their usage. By the 1990s it was difficult to find a guidance service in any developed country which did not make use of such systems.

The third was the *web* phase, in the late 1990s. The advent of the Internet meant that instead of free-standing systems located in career guidance centres, websites could be developed which individuals could access instantly from a wide variety of sites, including their homes. The ease of developing such websites produced a massive increase in their number; the ease of interconnecting them meant that they no

longer needed to be viewed as discrete entities. Rather than perceiving ICT solely as a service from external suppliers, guidance services began to develop their own websites.

The fourth is the *digital* phase, which we are now entering. The hitherto separate "analogue streams" of the computer, the television and the telephone are merging into an integrated "digital river" (Cunningham & Fröschl, 1999). Individuals are now able to access the Internet not only through their personal computers but also through their televisions and mobile phones. Greatly enhanced bandwidth will shortly enhance its speed and its capacity for transmitting video and audio as well as text.

Across these four phases, three key trends can be discerned. The first is increased *accessibility*. Whereas initially ICT-based career guidance and information services were available only at a select number of technically-equipped service locations, they are now available not only in most guidance services but also in a vast range of other locations – homes, workplaces, community locations. The second is increased *interactivity*. In the early stages, resources were developed as separate systems, offering only limited interactivity with users. Now, they are highly interactive not only with users but also with each other and across inter-media boundaries. The third is much more diffused *origination.* Whereas the initial computer-aided guidance systems were developed by large organisations with substantial resources at their disposal, anyone can now develop their own website. This has led to much stronger private-sector activity in this area, which in turn has implications for public policy, to be discussed later in this paper.

3 APPLICATIONS

Existing European ICT-based resources in the field of career information and guidance have been classified by Offer (1997) in relation to the DOTS model developed by Law & Watts (1977): self awareness; opportunity awareness; decision learning; and transition learning.

Resources concerned with *self awareness* are designed to help users to assess themselves and to develop a profile in terms which can be related to learning and work opportunities. These resources range from simple-self assessment questionnaires to psychometric tests; they also include more open-ended "brainstorming" approaches.

Resources concerned with *opportunity awareness* include databases of learning and/or work opportunities, with a menu of search criteria which enable users to find data relevant to their needs. The databases may cover: education/training institutions or courses; occupations, employers, or job vacancies; voluntary-work opportunities; and information on how to become self-employed. Some include relevant labour-market information on supply and demand. There are also some examples of work simulations which enable users to explore particular occupational areas in an experiential way.

Resources concerned with *decision learning* include matching systems which enable users to relate their personal profiles to relevant learning or work opportunities. The outcome is a list of the opportunities which match the profile most closely.[1] Also included here are content-free decision-making

1. Offer (1997) lists these matching systems as a separate category.

resources designed to help users to explore options in a systematic way, balancing the desirability of particular options against the perceived probability of achieving them.

Finally, resources concerned with *transition learning* are concerned with helping users to implement their decisions. These may include support in developing action plans, preparing curricula vitae, completing application forms, and preparing for selection interviews; it may also include help in securing funding for learning opportunities or for becoming self-employed.

From a policy perspective, it is important to recognise the range of these applications. Policy interventions (see later) are often confined to a limited sub-set of this range – databases, for example.

Many separate packages and websites cover only one or two of these features; some, however, cover more. In the days of computer-aided guidance systems on mainframes and microcomputers, there was a debate about the relative merits of *mini* systems, each addressing particular guidance functions, and of *maxi* systems which attempted to cover as many as possible of these functions and to facilitate "cross-pathing" between them (prominent examples of maxi systems included DISCOVER and SIGI in the USA, CHOICES in Canada, and PROSPECT (HE) in the UK). Some argued that a plurality of "mini" systems encouraged diversity and choice, enabling users to select the mix of such systems which met their needs; others that maxi systems enabled users to move seamlessly between different functions, avoiding semantic discrepancies and conceptual discontinuities, and modelling the full scope and complexity of the career decision-making process (Jackson, 1993; Watts, 1993). The advent of the Internet reframed this argument, by making it possible for websites to build quasi-maxi systems on what Offer (1997) termed a "Lego" model – piece by piece, sometimes through links to other sites.

The feasibility of developing ICT-based systems which cover the whole of the guidance process poses the issue of how such resources relate to the role of the counsellor. How far should they be viewed, for some clients at least, as an *alternative* to the counsellor? To which clients might this be appropriate?

4 CLIENTS

Traditionally, most guidance services have been built around one-to-one counselling interviews. The models used in such interviews have varied: from diagnostic approaches in which the counsellor has analysed the individual's attributes and made appropriate recommendations, to person-centred approaches in which the counsellor helps clients to explore their perceptions of themselves and of the opportunities open to them, and to reach their own decisions. In more recent years, however, there has been a move in many countries towards a more open professional model, in which the concept of the counsellor working with individual clients in a psychological vacuum is replaced or supplemented by a more diffuse approach, utilising a more varied range of interventions (e.g. curriculum programmes, group work, and use of ICT-based resources), with a greater emphasis on the individual as an active agent rather than a passive recipient within the guidance process (Watts *et al*., 1993). As part of this, some guidance services have moved away from a service centred on long interviews to an open-access model, with information rooms containing ICT and other resources supported by brief informal interviews, and with long interviews being available as a residual resource to those who need them (e.g. Watts, 1997).

To rationalise such a model, Sampson *et al.* (1999a; 1999b) contend that a screening process is required. They distinguish three levels of service delivery. Individuals who are initially judged to have a *high* level of readiness for decision-making are referred to *self-help* services: career resource rooms and websites designed to assist them in selecting, locating, sequencing and using needed resources with little or no staff assistance. Those judged to have a *moderate* level of readiness are referred to *brief staff-assisted* services: practitioner-guided use of resources, supplemented by group sessions. Those with a *low* level of readiness are referred to *individual case-managed* services: individual counselling and longer-term group counselling. Estimates of those requiring case-managed services tend to fall between 10% and 50%, depending on the population, with the remainder being divided between those requiring self-help and brief staff-assisted services. A range of readiness assessment measures, using a variety of constructs (e.g. career certainty/indecision, vocational identity, dysfunctional career thoughts), exist to help in the screening process (Sampson *et al.*, 1999b); dimensions such as age, socio-economic status, gender and educational level represent administratively convenient but conceptually inadequate proxies for such measures. The choice of these constructs/dimensions is crucial in planning services. A further important policy issue is whether decisions about the extent of staff assistance are to be made by policy-makers or counselling staff on a "rationing" basis, by counselling staff in negotiation with clients, or by the clients themselves.

Such screening models were initially devised to apply to clients who visit career guidance centres. In addition, however, ICT now has the capacity to take services to individuals who find it difficult to visit such centres – because they live in geographically remote areas, for example, or because they have disabilities or are home-based for other reasons, or because they are occupied during the centre's opening hours. The concept of "distance guidance", by telephone or through the Internet, makes it possible to deliver guidance services to remote locations, with or without direct staff assistance.

In addition, some clients may *prefer* to access services at a distance. Increasingly, in all fields, consumers want a service to be available when they identify a need for it, with minimum delay and minimum effort: they want it *here*, and they want it *now*. They may be willing to undertake visits to dedicated physical centres where this is feasible and is perceived as offering added value, but their decision rules in this respect are becoming more and more discriminating. These decision rules may be influenced by their preferred learning style. For example, Sampson (1999a) suggests – using Holland's (1973) personality typology – that an "investigative" individual who typically uses independent problem-solving might prefer (and learn more effectively) using the Internet to obtain career resources and services; whereas a "social" individual who typically uses interaction with others in problem-solving might prefer (and learn more effectively) by interacting with counsellors and fellow clients in a career centre.

In these various respects, ICT has the potential to significantly increase access to guidance services, freeing it from constraints of time and space. At the same time, however, there may be restrictions on access to the ICT resources themselves. There is widespread concern that the growth of the Internet is exacerbating inequalities between the information-rich and the information-poor: between industrialised and developing countries; between the rich and poor within each nation; and between those who are technically literate and those who are technically inept (OECD, 2000). In the USA, for example, households with incomes of $75,000 and higher are twenty times more likely to have access to the Internet than those at the lowest income levels, and more than nine times as likely to have a computer at home (cited in Lee, 2000). Growing access to the Internet through the television and telephone is likely to reduce these gaps; libraries and other public information points can also have an important role to play. For the present, though, the gaps remain substantial.

5 INTEGRATION

5.1 Levels of integration

Most computer-aided guidance systems have been designed so that they are capable of being used on a stand-alone basis, without counsellor support. In general, however, most commentators on the use of such systems advocate the benefits of integrating them into more broadly-based guidance services. There are three models for such integration. The first is the *supported* model, in which the user is seen – usually for a brief period – before and/or after using the system. The second is the *incorporated* model, in which the system is used within another guidance intervention – within a classroom session, for example, or within a counselling interview, enabling counsellor and client to work with the system side-by-side. While this latter example can be very fruitful, it also means that, far from reducing the counsellor time required by the client, the system may increase it. The third model is the *progressive* one, in which the use of the system is preceded and/or followed by other guidance interventions – interviews, group sessions, experience-based approaches like work experience and work shadowing – in a developmental sequence (Watts, 1996a). One of the functions of the screening process proposed by Sampson *et al.* (1999a; 1999b) is to prescribe such a sequence, based on the client's needs.

These models can also be applied to websites, but here levels of integration are potentially much stronger. Sampson (1999a) distinguishes between *independent* websites which are free-standing and may be developed by a wide variety of commercial, governmental and other agencies, and *integrated* websites which are developed by career centres themselves. The integrated websites are of particular strategic significance for career centres because they sit at the interface between, on the one hand, their local face-to-face services and other resources within their centres, and on the other, the independent web-based services – often national or international in nature – which provide a rich range of additional resources but can also be seen as competition. Through their websites, career centres can identify the "global" resources they wish to utilise (some through simple technical links, but others requiring commercial or non-commercial partnership arrangements), and then intertwine them with their own "local" provision. In this way, they can fuse "high tech" with "high touch" (Offer *et al.*, 2001).

5.2 Roles of integrated websites

Offer & Sampson (1999) suggest that career centres' websites can have at least five different purposes. One is as a *funnel* into their own existing off-line services, aiming to maximise take-up of these services. The second is to act as a *diversion*, seeking to take the pressure away from these off-line services by diverting users to other, usually web-based resources where their needs can be met. The third is an enhancement of such diversion, seeking to deliver *on-line guidance* within the site itself. The final two add further enhancements: providing a *forum* for putting users in contact with others facing similar issues to their own, or with people who may offer help in relation to these issues (e.g. potential career mentors); and providing a source of *distance learning* programmes in career management skills and related areas (for examples, see Offer *et al.*, 2001).

Most of these purposes are not, of course, mutually exclusive, but the choice and balance between them require strategic decisions to be made, as do the choice of partners for any partnership arrangements. Not only this, but the process of making such decisions can be a valuable opportunity to review the strategic development of the centre as a whole. Many career centres clearly start by simply establishing a presence on the Internet: as Offer (1998) puts it, "we're here, because we're here, because we're here". Thereafter, it seems likely that they go through four developmental stages. The first is

promotional: promoting what the service offers off-line. The second is *adaptive*: delivering some of these services in on-line form. The third is *innovative*: delivering new services on-line which are not possible, or less feasible, off-line – which is where any partnership arrangements may come into play. The fourth is *synergistic:* to intertwine on-line and off-line services in new ways. The further a career centre moves through these stages, the more it is using its website as an agent of change in relation to its service provision as a whole (Offer *et al.,* 2001).

5.3 Telephone helplines

Alongside websites, there has been growing interest in the use of telephone helplines in delivering career information and guidance services. The largest telephone helpline service in this field is the Learndirect service in the UK, which was launched in February 1998 and by the end of 2000 had responded to 2.4 million calls. Other more limited helplines have been launched in other countries, including Canada and New Zealand. A comparative analysis of these helplines indicates that some have been promoted essentially as *information* services; others as career *counselling* services. Some are focused primarily on *learning* or on *work;* others on *career*, embracing the two. Some are aimed at *young people* or *adults*; others are *all-age.* Some are *separate* services based on callcentres; others are *integrated* in various ways into more broadly-based services (Watts & Dent, 2002).

The decisions made about the framing of helplines in these various respects are critical. Included in this is the extent to which the service should be offered at national or at local level. With Learndirect, the original idea was that calls should be routed to helplines based as locally as possible. This is the model used, for example, by the UK National Health Service helpline NHS Direct: calls are routed to local callcentres, and are only passed elsewhere when lines are busy; the notion being that, in time, it might become the "gateway" to all local health services (McLennan, 1999). In the case of Learndirect, by contrast, the helpline is offered largely at a national level. This can result in some loss of quality, in terms of access to local knowledge. Against this needs to be set the consistency of service and of helpline adviser training offered by relatively large-scale operation. Such decisions have a significant influence on the balance between "global" and "local" dimensions in guidance provision. This in turn is critical in determining the level of integration that is possible with face-to-face services.

5.4 Technological synergy

A further important issue here is technological synergy. Whereas the Learndirect helpline was originally conceived as a separate service, a Learndirect website has now also been introduced, and increasing attention is being focused on integration between the two. The website includes not only courses and occupations databases, but also a diagnostic package which provides an assessment of skills, interests and values, and connects the results to occupational families. Each page of the website includes a "call me" button which generates a telephone call from a Learndirect adviser. In principle, it should be possible in future for the adviser to bring up on their screen the caller's work to date – a draft curriculum vitae, for example – and work on it on-line with them. Conversely, more callers could be encouraged to access the website and be supported in doing so. Again, greater use of e-mail should make it possible to sustain contact over a period of time through a mixture of synchronous (e.g. telephone) and asynchronous (e.g. e-mail) communications (Watts & Dent, 2002).

The concept of flexible usage of the telephone, website and e-mail, linked with face-to-face facilities, opens up new opportunities for the delivery of career information and guidance. It means that individuals can initially access help in the form which is convenient to them and with which they feel comfortable. Some feel comfortable visiting a careers centre; some do not. Some are more comfortable on

the telephone, or on e-mail; some are not. A further dimension will be added to this by the likely move towards ready domestic access to videophones or interactive digital television. All of these could be regarded not as alternative services but as portals into a wide, flexible and well-harmonised network of services which can enrich the learning pathways available to the individual. Public policy sometimes seems to impede such harmonisation (see e.g. Watts & Dent, 2002); it could, however, proactively promote it.

5.5 Resource-centred v. relationship-centred

A key issue in relation to such models is the significance attached to the relationship between the individual and the counsellor. The model could be based on a co-ordinated range of *resources*, of which the counsellor is seen as one. Or it could place the *relationship* with the counsellor at the centre, viewing other resources as supports to this relationship. In the latter case, it needs to be recognised that the relationship can now be sustained in a variety of ways: not only face-to-face but also at a distance; and in the latter terms, both through synchronised communications like the videophone, the telephone and Internet "chat", and also through asynchronous communications like e-mail and voice-mail.

The rationale for the relationship model is that career decisions have an important cognitive component, but that they are bound up very closely with people's feelings about themselves, their sense of identity, and their dreams and aspirations. Accordingly, the individual can best be helped by working in a relationship with another individual who has the skills to enable them to address their distinctive identity. This is a strong tradition within the career guidance field, but has come under attack on two linked grounds: that by placing the relationship at the centre, it cedes too much power to the counsellor; and that because it is so labour-intensive and counsellors are costly, it is not practicable or sustainable as an extensively delivered model. This leaves the alternative view that guidance professionals should see themselves primarily not as counsellors but as managers of guidance resources: managing diverse resources in ways which enable individuals to find the means through which their personal needs can best be met (Watts, 1996a).

In relation to these two models, ICT tends to be viewed as leaning towards the resource-based model. But this is not necessarily the case: certainly ICT does not of itself demand a jettisoning of the relationship model. Indeed, there is a risk that contrasting the two models too starkly may implicitly hold frozen the familiar and established practice of the face-to-face one-to-one interview. As Tait (1999) has pointed out, it is important to understand how technology is now transforming the ways in which human relationships are pursued and managed. Instead of assuming that crucial elements are lost when relationships are mediated by technologies, more attention needs to be paid to how technology is enabling such relationships to be developed and sustained in ways which are released from the constraints of space, time and physical presence.

Constantly lurking beneath professional anxieties about the use of ICT in guidance has been the fear of reductionism: that the use of technology will lead to simplistic, "quick-fix", information-based approaches, in which the human element is marginalised or eliminated. Increasingly, however, it can be used within an integrated approach not only to supplement but also to extend the range of this human element.

The key distinctions now are not simply between human interventions and ICT-based interventions, but between a more complex range of interventions: direct face-to-face counsellor-client interactions, on either a one-to-one or group basis; technically mediated counsellor-client interactions, on either a synchronous or asynchronous basis; and stand-alone ICT-based services in which standardised services can be repeatedly used by different users without additional human resource cost. An important

issue is how these different interventions can be optimally blended in effective service delivery, attending to clients' varied needs and preferred learning styles. This has implications both for the training of counsellors, and for wider public policy.

6 POLICY ISSUES

The potential roles of public policy in relation to career information and guidance services are four-fold: legislation, remuneration (i.e. funding), exhortation and regulation (Watts, 2000). Legislation is important in some countries in providing the essential base for such services, but is likely to apply to the services as a whole rather than to ICT in particular. The other three roles, however, can apply specifically to the use of ICT in career information and guidance services.

6.1 Funding

Many governments have seemed prepared to offer funding for initiatives involving the use of ICT in this field. Indeed, they have not infrequently seemed more willing to provide funding for such initiatives than for extensions of other forms of service delivery, and also less demanding in seeking evidence of effectiveness (Watts, 2001). In part this is because such funding is often linked to wider policy agendas: in particular, the interest of many governments in promoting e-learning (OECD, 2001) and in improving the ICT capability of their citizens, as a way of seeking to ensure their nation's future economic competitiveness. It therefore has a kind of "face validity" which sometimes seems to protect it from close critical scrutiny. Also, it is commonly justified in terms of promising future cost savings in expenditure on face-to-face career guidance services, or – a somewhat different argument – extending access to such services without commensurate increases in costs. Systematic evidence of such effects, and whether they involve any reductions in quality of outcomes, is however currently lacking. Indeed, there is some anecdotal evidence that ICT-based services may increase rather than reduce the demand for face-to-face services – and therefore lead to greater frustration if these services are not available.

It may also be that the notion of evaluating the relative merits of different models of service delivery – face-to-face, by computer, by telephone and so on – as discrete alternatives is now outdated. In the past, these have tended to be viewed as alternative means to the same ends, which should accordingly be evaluated in comparative cost-effectiveness terms. If however – as argued earlier in this paper – effective models of delivery are interweaving human and technical resources in ever denser ways, this may be an inappropriate approach. Instead, it may be that the important question now is how these models can be most effectively combined in a synergistic way, so that they add value to one another, and provide new service-delivery options for clients.

The role of government in funding ICT-based services is though open to question on more basic grounds: that the development of such services can be safely left to the market, and that public intervention is accordingly unnecessary. Certainly the Internet has fostered the growth of an open market in the field of career information and guidance: anyone anywhere can launch such services. For example, Web-based recruitment agencies are increasingly offering "guidance" or "careers advice" as a "loss leader" (Offer *et al.*, 2001).

The role of the market in relation to ICT in particular is closely linked to its role in relation to career information and guidance in general. The core of the case for public investment in such services is that they represent not only a private good but also a public good, in terms of their contribution both to economic efficiency and to social equity. Traditionally, such services have often been perceived as part of social-welfare provision. In recent years, efforts have been made in a number of countries to apply market principles to social and economic activities wherever this is feasible. Under this view, public intervention in relation to public goods should be confined to areas where there is market failure (Watts, 1996b).

6.2 Market failure

In relation to career information and guidance, the market would seem to be potentially inadequate in three important respects. The first is *impartiality*. The market tends to respond to the needs of those with most resources at their disposal. In the field of career information and guidance, therefore, it tends to be drawn to the recruitment interface, and to the needs of employers at that interface (e.g. Offer *et al.*, 2001). This can both constrain and distort the services that are offered, focusing them around the need to fill the vacancies on offer rather than to meet the individual's needs. This may not be sufficient to fulfil the public interest.

Secondly, there may be market failure in terms of *investment*. This is particularly true in relation to career *information*, which is not "excludable": individuals are not willing to pay for the collection and provision of information which will subsequently be available to others free of charge. This suggests that career information services should be provided by the state. On the other hand, it is argued by some that *guidance* services should *not* be funded in this way, because they are specific to the individual and therefore *are* "excludable" (Bartlett *et al.*, 2000). It is significant, however, that in practice the only area where a significant market has developed for career guidance services is outplacement counselling, where the employer pays but has no interest in the nature of the outcome; elsewhere it seems to be difficult to commodify guidance in the way that a market with growth potential would require (Watts *et al.*, 1993; Watts, 1999).

In relation to ICT, the argument for the public interest in investment in career *information* is evident in the number of countries where governments have supported the development and maintenance of databases on educational and occupational opportunities. Such databases can either be made directly accessible to clients, or can be made available for private-sector organisations to package and distribute, whether on a fee basis or not, as a means of assuring the quality of non-government information provision. In the USA, for example, federal and state funding have for many years supported a network of career information delivery systems, co-ordinated by the National Occupational Information Co-ordinating Committee (McKinlay, 1989)[2].

It is also significant, however, that all of the major "maxi" computer-aided *guidance* systems (see earlier) were developed initially with funding from government or from private foundations (Watts, 1993). Similarly, Sampson (1999b) has argued that publicly-supported Internet-based systems allow centralised planning of the resource and service design, increasing the likelihood that different functions will be effectively integrated (e.g. using the output of a transferable skills analysis as input for the creation of a curriculum vitae). Sampson notes that governments and foundations prefer to provide pump-priming funding for innovations which the private sector will then maintain, reinvesting a proportion of the profits into ongoing development. This is the model that was used in the case of North American "maxi" systems like CHOICES, DISCOVER and SIGI (Watts, 1993).

2. Though federal funding for NOICC has recently ceased.

This is linked to the third potential source of market failure, which relates to *ownership.* If the aim is to integrate ICT as closely as possible into more broadly-based guidance services, and if these services are publicly-funded, then marketisation of the ICT-based services may impede the extent of the integration that is feasible. This issue underpinned the turbulent history of the UK "maxi" system – PROSPECT (HE)[3]. It is also evident in, for example, current concerns in university career centres in the USA about the extent to which many of their "mission-critical" activities are now dependent on commercial vendors like Monster.com. These vendors are perceived to be using their position to remove the career centres from the graduate recruitment process and establish a direct customer relationship with the student and employer (Offer *et al.*, 2001) – an argument that arguably would severely weaken the wider guidance role of these centres.

Such arguments may provide a case for some level of continued public investment in ICT in career information and guidance services. Nonetheless, there is clearly an important role for the market too, harnessing additional resources and encouraging competition that will foster innovation. The balance is likely to vary across countries, depending on their structures and traditions and on the political philosophies of their governments.

6.3 Quality assurance

Where the role of the market is extensive, there remain issues about whether governments should retain a residual responsibility for ensuring quality – either by *exhortation*, through guidelines and the like, or by *regulation*. These issues are particularly pressing in relation to the Internet. The quality of websites varies massively. Some are well-designed and user-friendly; some are not. Many give no information about the sources of data and when they were last updated. A study of websites offering no-cost career assessment found that almost none included any reference to how instruments had been developed or to underpinning psychometric data on reliability and validity (Oliver & Zack, 1999). There often appears to be no security regarding the confidentiality of client data. Little account is commonly taken of clients with visual disabilities or low vocabulary levels.

A variety of strategies can be adopted in response to such issues. One is to offer *guidelines*; another is to produce detailed *quality standards*. These can be linked to a *self-assessed* kitemarking system based on websites' affirmations that they meet these standards; or to an *accredited* kitemarking system based on verification by an external body. All these systems can be *voluntaristic*, or can be made *compulsory* – for example, for any services used by, or referred to by, guidance services in receipt of public funding.

Three further questions need to be addressed here. First, should such standards relate to the websites alone or to the guidance services in which they are embedded? The fact that some websites are independent and some are integrated (see earlier) suggests that both are needed. Second, should governments that decide to go down these routes seek to develop the necessary tools and mechanisms themselves, or to encourage and support other bodies to do so? The main relevant guidelines produced to date in Canada, the UK and the USA have been produced by professional bodies (NCDA, 1997) or by

3. The development of the initial version of PROSPECT (HE) was funded mainly by government. The governmentdecided to invite tenders to manage the implementation and dissemination of the system within higher education. It awarded the contract to a commercial publishing company rather than to the professional careers advisers (the Association of Graduate Careers Advisory Services) and their national unit (the Central Services Unit). But the careers advisers had developed the occupational database, and their response to the decision was to demand a fee for its use which made the contract commercially unviable. Negotiations became deadlocked, and also impeded the planned extension of the system to other sectors. In the event, the government was forced to climb down and to offer the higher education contract to CSU/AGCAS (for a detailed account, see Watts, 1993).

independent sectoral bodies (Canadian Labour Force Development Board, 1998; Guidance Council, 2000[4]). Third, should standards be developed, set and accredited at national level, at multinational (e.g. European) level, or at a global level? The global nature of the Internet would suggest the latter, but there may be a trade-off here between desirability and feasibility.

7 CONCLUSION

The role of ICT in guidance can be seen in three ways: as a *tool*, as an *alternative*, or as an *agent of change* (Watts, 1986). Policy-makers have often tended to view it in the first two guises: either as a supplement to existing services or a potential substitute for such services. But the wider emergence of websites and helplines as forms of technically mediated service delivery means that the potential of ICT as an agent of change – paralleling the transformations in many other service sectors – is now far greater than before. It is this that now provides the main policy challenge.

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4. The Guidance Council standards currently include standards relating to unmediated advice and guidance at a distance, additional standards for websites per se are under consideration.

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