

# THE ROLE OF: EMERGING TECHNOLOGIES

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## 1. Overview

This paper synthesizes the section of country reports that has addressed the role of emerging technologies in career development and public policies.

The overall aim is to identify and describe the aspects that may play important roles in relation to further developments and successful implementation of existing and emerging technologies in the career service sector. This synthesis is based on the 15 country reports that covered the theme.

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The following three questions were used to explore the role of emerging technologies in career development and public policy.

- 1) How are technologies currently used to support workforce preparation, placement, and development policies for young people in your country?
- 2) How does the use of technology connect with existing structures of the provision of career guidance? Finally,
- 3) what are the challenges your country faces in relation to emerging technologies? The following chapters discuss the nature of the problem, as well as introduce the key findings and implications for the future.

## 2. The Nature of the Problem

Information and Communications Technology (ICT) in career development refers to the products, infrastructure, and electronic content that enhance policy and systems development for career services, resources, and tools. It refers to how interactive services, resources, and tools are designed and developed for citizens, how citizens use these, and how such uses in turn reshape their designs. It also refers to the digital competency required to use ICT in a career development context.

Digitalization across our daily lives, including the use of ICT in career-related activities, has increased dramatically in recent years. This increase has led the career service development and public policy sector to acknowledge the need to expand its understanding of these emerging technologies and their impact on career development and public policy. A growing consensus exists both in research and in various policy documents reflecting the role of ICT in career development, which is both important and becoming increasingly essential.

## 3. The Role of ICT in Relation to National Career Development Policies

The analysis of the 15 country papers revealed variations in the role of ICT in relation to career development and public policy. This role can be conceptualized on a continuum ranging from unexploited and emerging use to strategic use of ICT. On one end of the spectrum, the countries are in a stage of identifying the use of ICT and applying it to career services, whereas on the other end of the spectrum, the focus is on the systematization of the use of ICT and the improvement of service efficiency.

When the role of ICT in relation to career development policies is unexploited, the focus regarding the use of ICT is on gathering, publishing, and delivering educational and occupational information. This use of ICT supports individual learning processes, as students have online access to a wide array of books and journals.

The emerging use of ICT in career development aims to support traditional career services through institutional

websites and additional services from national, provincial, local, and institutional providers.

Websites contain information about learning pathways or labor market opportunities and include exercises or tools for self-assessment concerning individual interests, personal competences, or attitudes.

The focuses of national policies are on developing the use of ICT and on widening and extending access to guidance through developing online career information and services. Online tools are used also as a medium for one-to-one communication.

In a number of countries, the role of ICT is acknowledged but still fragmented.

These countries have a tradition of career services with national databases of educational and labor market information. Nationally maintained systems offer free access to validated and standardized occupational information or the real-time dynamics of the labor market.

These advanced features allow citizens to search for labor market options in relation to their interests and skills. The emphasis is on converting the labor market information into labor market intelligence. Technology supports the abilities of schools, community-based organizations, colleges, and job centers to engage in cooperation with the service provision. Countries have started to develop curriculum models or online portfolios that schools can use to engage in technology as an integrated feature in a comprehensive model for career development and the acquisition of individualized learning plans for all students.

The focus of career development policies is maximizing the use of ICT and providing effective client services. Service providers are exploring how to utilize ICT, including through the support of traditional face-to-face services, the provision of e-learning platforms to deliver workshops, and the use of video clips, e-mail, and web-conferencing to provide wider access to these services.

The strategic use of ICT in career development, for example in Denmark, aims to systematize the use of technology and improve the quality and efficiency of career services through more efficient use of ICT resources and skills.

A key driver of change is improving ICT capability and service modernization with mediated service and self-help provisions. The emphasis is placed on rethinking and developing a more integrative role of ICT in creating a common conceptual framework for modeling the services. Attention is also given to ICT in national guidance strategies or in legislation,

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including the use of ICT in career development in national eGovernance strategies. Aside from providing services to citizens, technology provides a ground for common knowledge creation among citizens, guidance practitioners, and policy makers.

The findings across different country papers show similarities with the syntheses of the earlier symposia on the use of ICT in career development. However, the recent development of technologies provides a new insight that is emerging across the countries.

The delivery of information from practitioners to clients has shifted to communication, which includes multi-synchronous interactions in which direct communication and asynchronous means are combined. ICT facilitates communication and the collaborative construction of knowledge among citizens by means of social media and mobile devices.

The use of technology widens the number of participants engaged in career development processes. Countries report that they have developed web-based communication environments or apps that make the same content and career information accessible for students, parents, and companies. This initiative facilitates the work of practitioners and provides personalized support to citizens.

The delivery focus has shifted from support for individuals to the development of the capability of influencers and improvements to national career development systems. Technology is not only an agent for change but it is also an impetus for the paradigm shift in career services.

## 4. Emerging Promising Practices

Most countries provide information on national career information systems or online career services, which include main guidance functions, such as career exploration, career planning, and job search assistance. Distance service delivery and one-to-one communication are supported by telephone helplines, e-mails, or video conferencing tools. An advanced use of technology can be found in interactive working spaces, which include tools for individualized learning plans or career portfolios (e.g., in the United States, Canada).

The CareerNet in South Korea is an integrated working environment that customizes its content to the needs of students, parents, and teachers. It includes a system that links services both to PCs and mobile devices (e.g., mobile apps) through which students can receive career planning services and which supports scheduling, career exploration, and

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learning. In Finland, the aim is to merge existing educational information, career services, and the information management system into one integrated online entity for the joint use of learners, education providers, and public administration with a systematic approach. The first available services consist of online national joint application systems for upper secondary education and higher education.

Estonia, Denmark, South Korea, Saudi Arabia, and New Zealand aim to develop online working environments or mobile apps to reach family members as the stakeholders and influencers in career development processes. The goal is to help

parents develop expertise as they support career development processes at home.

New ICT tools have great potential to balance self-help and staff-assisted services for citizens, so they facilitate increased access to and maintenance of equity in service provision in a cost-effective way. The online Employment Readiness Scale in Canada is a standardized pre-post measure of employment readiness commissioned by the federal government. This tool provides both an individual assessment over time and roll-up reports across clients that show patterns of need and changes in employment readiness. This tool can be used to match the level of service to the clients' needs when they seek employment-related assistance for the first time.

An example of a national integrated guidance system is the e-guidance system in Denmark, which is targeted to all citizens. The service is open seven days a week, including evenings. The system is a supplementary service for youth guidance centers and regional guidance centers. The government aims to enhance further this service by integrating technologies into the development of guidance methods and delivery modes of guidance services. In the United Kingdom, the wider government agenda is to encourage the use and re-use of government data sets. This means individuals and organizations can use the “LMI for All” data for any purpose, including commercial use. The data has been used to power apps and websites that are supporting career work.

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## 5. Emerging Challenges

“Transformational technology” was one of the four sub-themes of the Fifth International Symposium 2009 in New Zealand. After the Symposium, an informal working group identified the following 11 areas for further consideration: access, the pedagogy of virtual career learning, purpose and use of emerging technological tools, use of social media, organizational competence and interest, practitioner competence, practitioner training, citizen/user competence, evaluation, citizen/user involvement, and policy maker interest.

Similarities with these earlier findings exist in this analysis of the key issues facing policy makers concerning the use of ICT in career development.

### Access and Affordability

Although the accessibility of ICT has considerably improved, inconsistent access and the stark discrepancy in the availability of infrastructure across regions remain important challenges for several countries. Even when infrastructure is available, the cost of access remains a significant concern, in addition to the digital divide among citizens.

The lack of local context-related content, as well as content in local languages modified to fit the latest ICT technology, is another challenge. Some countries report difficulties in the development of reliable and accurate career information that is relevant and useful to local needs and contexts. Furthermore, the translation and cultural adaptation of existing high-quality content are perceived to be difficult.

Some countries report difficulties in securing funding to develop the use of ICT in the career development sector or in purchasing a license or a subscription from a system provider. On the other hand, some countries have been able to use effectively either co-funding mechanisms or governmental funding for national online services.

### Practitioner Competence

Career practitioners play a significant role in the successful integration and implementation of ICT in career services, and several countries are challenged with workforce capacity building. The successful integration of existing and emerging technologies

in career services is not only dependent on the skills or technical facilities available but also on the practitioners’ willingness to accept the changes the new technology may bring to service delivery.

Diverse technologies and fragmented services  
Several countries express challenges relating to fragmented services and diverse technologies. The merging of different systems from different sectors into one integrated entity requires a jointly agreed common conceptual framework for career services, long-term planning, and a joint funding mechanism.

Sectoral career development policies  
The current use of ICT in career development varies greatly in quality due to the absence of national regulations, centralised quality monitoring, overarching guidelines, and standards to manage adequately the effective use of emerging technologies.

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## 6. Implications for Practice, Research, and Policy

Based on this synthesis across the country reports, the following implications for practice, research, and policy can be identified for further discussion.

### Practice

The better use and seamless integration of emerging technologies with effective practices are not only related to technology but are closely connected to the development of delivery methods targeted to different groups of users. It is important to expand

the awareness of the varying models of career interventions with appropriate/suitable online technologies.

## Research

To appropriately guide the evolution of modern technology and its pedagogical consequences for career development and public policies and to provide adequate support for those who need it, it is important to:

- Conduct research that can be applied to developing tools that recognize individual citizen and group differences in general and digital literacy, as well as in their capacities to source, interpret, evaluate, and apply information and instruction in relation to career development.

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- Investigate the issue of the skills and competencies required for the development and successful use of emerging technologies in career development.
- Make use of big and open data (data that can be used, reused, and redistributed) for the development of an evidence base for lifelong guidance policies
- Integrate the use of ICT in national quality assurance mechanisms for lifelong guidance
- Develop and continuously improve standards of practice for the use of ICT in lifelong guidance services and programs.

## Policy

It is important that the ministries that share responsibility for lifelong guidance provision:

- Have a common agreed framework for the role and use of ICT in lifelong guidance provision and to communicate this to all service providers and

stakeholders.

- Allocate resources for public access to online career services (e.g., in education and training settings, public employment services, libraries).
- Integrate the use of ICT in career education programs to help citizens develop skills to evaluate and use online assessments and information, including socially constructed information, related to their career development.
- Avoid fragmentation and maintain and strengthen the political momentum of career development and public policy and further enhance the synergies among different actors and stakeholders at national, regional, and local levels.
- Treat ICT in lifelong guidance as part of wider national e-Government mechanisms.
- Address the upgrading of the initial and continuing training of career practitioners, particularly in the use the ICT to deliver career services.
- Deepen policy makers’ understandings of the important role in relation to the further development and successful implementation of the existing and emerging technologies in career development and public policy.

## 7. Key questions for Consideration

1. Where is your country now and where would you like your country to be in 5 years. What one step could be taken to move further on the continuum?
2. Who are the main users of online features of your national guidance services. What one step could be taken to widen the user groups?
3. There is an assumption that both the public and providers can be skilful and knowledgeable with using ICT effectively. What is being done/needs to be done to make sure that both providers and users are in fact equipped to benefit from ICT?