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EN

Handbook

of ICT practices for guidance and career development

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Foreword

There is rising awareness of how information and communication technologies (ICT) can support people in their careers. Information about vacancies, labour market trends and learning options easily can be made available. Online training courses, access to validation of competences, and development of basic skills can also be easily accessed, if platforms are made available.

Authentic virtual market places, where individuals signal their skills and knowledge, and where enterprises advertise their skills needs, existing placements, internships and apprenticeships, are a reality. A growing number of countries also allow individuals to have online portfolios that can support both individual and enterprise learning, as well as being used to support application processes.

Harnessing the potential of ICT is, nevertheless, not always easy and has often been a process of trial-and-error for many countries. Effective tools need to be fed with the right information, be supported by career professionals, updated and be fundamentally well integrated into the social contexts of the users. For example, successful cases show high levels of integration with school activity and pedagogical principles, adequate targeting of job searchers' and workers' needs, and high accessibility and ease of use.

Establishing the right scope, appropriate tool development cycle and guaranteeing the correct infrastructure and staffing which underlie ICT-based services may prove a great challenge. Given the variety of technical solutions, types of tool and target groups, it becomes important that policy-makers and careers service managers be aware of existing solutions, their potential and limitations.

The *Handbook of ICT practices for guidance and career development* provides a structured and detailed characterisation of well-established and effective practices in the European Union. It is aimed at supporting the transfer and adaptation of practices across national contexts. It contains a decision-making tool which helps identify critical factors in the development of ICT-based services and determine the best option for a specific context.

A wide range of services are covered, including portfolio tools, matching systems, prevention of early school leaving, support to the unemployed,

competence development, and career information for the young. The handbook is easy to use, with rich information and tips, and also providing high-level policy recommendations.

I trust this tool will support national capacitation of services in education, training, employment services and other relevant organisations. I also hope this publication will encourage the take-up of the best technology has to offer in the service of European Union citizens, stimulating fruitful cooperation between pioneers and the most recent adopters.

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Introduction to the handbook

Preamble

The primary objective of this handbook is to support structured knowledge exchange on activities, methods and tools supporting the successful integration of information and communication technologies (ICT) and labour market information (LMI) in career guidance services and presenting potential for transferability. The handbook aims to support (national level) managers in identifying successful ICT and LMI initiatives to transfer to their context and providing guidelines on how to integrate them into their national context by identifying and analysing their essential components. The handbook aims to serve as a starting point, as more elaborated information is available in the individual ICT and LMI case studies annexed to it.

The 25 ICT and LMI practices presented have been selected using a multidimensional decision framework (Chapter 1), with a view to meeting the following quality conditions:

(a) compatibility with research priorities for ICT and LMI integration in career guidance;
(b) innovativeness, exhibiting sufficient and reliable evidence for positive impact and successful implementation in the framework of career guidance centres at national and/or regional level;
(c) transferability and adaptability to other contexts.

The case studies were developed using meaningful data and information collected through interview-based fieldwork, conducted under the frame of field visits to the organisations responsible for the implementation of the selected practices; there was also well-targeted desk research prior to each field visit. With this in mind, the following section provides guidelines on how to use the current handbook.

Guidelines on how to use the handbook

The handbook consists of four chapters.

Chapter 1 categorises the 25 ICT and LMI initiatives explored into four clusters, depicting how initiatives combine different guidance approaches, types of ICT and LMI tools to address the diversifying challenges related to the implementation of effective lifelong guidance practices. These four clusters reflect the general thrust of an initiative to the high-level aims pursued; however, it is worth stating that multiple objectives are typically pursued by a single initiative with help of multiple ICT tools and multiple types of LMI.

Chapter 2 presents the 25 ICT and LMI initiatives explored in a short and concise manner. Each case is presented in a concise report format that depicts the most interesting and necessary information required when introduced to the specific initiative. This section allows readers to look at each initiative from multiple angles, enabling identification of potentially transferrable aspects, not only across countries but also across typical domain boundaries.

The third chapter introduces the decision-making tool, which aims to assist users of the handbook to reflect on key transferability assessment criteria (relevance, contextual, applicability) and to consider a broad range of respective questions that need to be asked, prior to adoption of an ICT and LMI practice that has been developed and implemented in a different context.

The fourth chapter presents the main findings and conclusions extracted from the in-depth analysis of the 25 cases reviewed.

CHAPTER 1.

Overview of the 25 ICT and LMI case studies

Following the EU-wide screening of a sample of 64 practices of information and communication technologies (ICT) and labour market information (LMI) integration in career guidance, selection of 25 practices for further, in-depth investigation through case studies was realised with the help of a multidimensional decision framework. The individual dimensions of this framework, along with the rationale for their selection and the operational approach for their application, were:

(a) the research priorities of the initiative;
(b) the organisational model of the initiative;
(c) the guidance system context in which the initiative was originated and operates;
(d) the transferability aspects and prospects of the initiative;
(e) the initiative's relevance at practical and/or strategic impact levels;
(f) the initiative's potential impacts;
(g) the geographic location and coverage.

Table 1 provides an overview of these 25 initiatives together with a listing of the key challenges in lifelong guidance they address, as well as the role ICT and LMI play respectively.

Table 1 **Practices selected for further study**

Short title (*)	Country	Key lifelong guidance challenges addressed
bib-wiki platform for continuous education counsellors	AT	• knowledge exchange (among education professionals, guidance counsellors, etc.) • raise guidance awareness • improve guidance/employment services • provide low-threshold information on education guidance to disadvantaged adults
Online tools of BiWi	AT	• improve matching between skills and jobs • promote self-assessment • aid transition from school education to career selection • improve guidance/employment services • tackle unemployment
Education choice tool Onderwijskiezer	BE	• improve matching between skills and jobs • promote self-assessment • aid transition from school education to career selection • improve guidance/employment services
EURES	EU	• improve matching between skills and jobs • improve guidance/employment services • raise guidance awareness • tackle unemployment
Occupation development navigator (BEN)	DE	• improve matching between skills and jobs • promote self-assessment • blend counselling • improve guidance/employment services • support those wishing to re-enter the labour market
eGuidance service	DK	• improve matching between skills and jobs • promote self-assessment • aid transition from school education to career selection • improve guidance/employment services • knowledge exchange (among education professionals, guidance counsellors, etc.) • raise guidance awareness
Pathfinder service	EE	• improve matching between skills and jobs • promote self-assessment • aid transition from school education to career selection • improve guidance/employment services • knowledge exchange (among education professionals, guidance counsellors, etc.) • raise guidance awareness • tackle unemployment

	Utilisation of labour market information	Utilisation of ICT
	• crowed sourcing of expert knowledge on education guidance • thematic compilation of third party LMI • personalised education advice • informal LMI	• interactive online tools • online WIKI • connection with third parties (LMI, PES, etc.) • open source • combination with offline elements
	• real-time LMI • personalised education advice • blended counselling • occupation information	• combination with offline elements • interactive online tools • personalised information storage (image building of professions and industries) • online counselling
	• effective job matching • blended counselling • occupation information • interoperability with job-search engines	• combination with offline elements • interactive online tools • online wiki • connection with third parties (LMI, PES, etc.)
	• occupation information • effective job matching	• interactive online tools • mobile application • online wiki • connection with third parties (LMI, PES, etc.) • personalised information storage • social media utilisation • online counselling • open source • e-portfolio
	• innovative user profiling • occupation information • life course related filtering of LMI	• interactive online tools • combination with offline elements • dynamic interconnection of electronic resources according to a life course approach
	• real-time LMI • personalised education advice • blended counselling • occupation information • interoperability with job-search engines	• interactive online tools • connection with third parties (LMI, PES, etc.) • personalised information storage • social media utilisation • online counselling • open source • e-portfolio
	• real-time LMI • personalised education advice • blended counselling • occupation information	• interactive online tools • online wiki • online counselling • open source

Short title (*)	Country	Key lifelong guidance challenges addressed
Teens gate	EL	• improve matching between skills and jobs • promote self-assessment • aid transition from school education to career selection • improve guidance/employment services • knowledge exchange (among education professionals, guidance counsellors, etc.) • raise guidance awareness • tackle unemployment
TET-tori	FI	• improve matching between skills and jobs • aid transition from school education to career selection • knowledge exchange (among education professionals, guidance counsellors, etc.) • improve guidance/employment services • raise guidance awareness
Kyvyt.fi	FI	• improve matching between skills and jobs • promote self-assessment • aid transition from school education to career selection • improve guidance/employment services • knowledge exchange (among education professionals, guidance counsellors, etc.) • raise guidance awareness
CareersPortal.ie	IE	• improve matching between skills and jobs • promote self-assessment • aid transition from school education to career selection • tackle unemployment • reduce early school leaving
Europass	EU	• promote self-assessment • tackle unemployment • increase the mobility of people in Europe for education and employment purposes
ePortfolio	IT	• improve matching between skills and jobs • promote self-assessment • tackle unemployment
Anelo.lu	LU	• improve matching between skills and jobs • promote self-assessment • aid transition from school education to career selection • improve guidance/employment services • raise guidance awareness

	Utilisation of labour market information	Utilisation of ICT
	• real-time LMI • effective job matching • personalised education advice • innovative user profiling • blended counselling • occupation information	• combination with offline elements • interactive online tools • online wiki • connection with third parties (LMI, PES, etc.) • personalised information storage • online counselling • open source • e-portfolio
	• real-time LMI • effective job matching • personalised education advice • blended counselling • occupation information • interoperability with job-search engines	• combination with offline elements • interactive online tools • online wiki • connection with third parties (LMI, PES, etc.) • social media utilisation
	• innovative user profiling • data entered by end-users • creation of e-portfolios with student skills and competences • customisation of LMI through user adaptation according to needs	• interactive online tools • personalised information storage • social media utilisation • open source • e-portfolio
	• real-time LMI • effective job matching • personalised education advice • innovative user profiling • occupation information • interoperability with job-search engines	• interactive online tools • mobile application • connection with third parties (LMI, PES, etc.) • personalised information storage • social media utilisation
	• innovative user profiling • provision of additional information on the awards not available elsewhere, to make easily understood to employers and institutions in other countries • provision of external links to available EU employment, guidance and education services	• combination with offline elements • interactive online tools • connection with third parties (LMI, PES, etc.) • personalised information storage • open source • e-portfolio
	• effective job matching • innovative user profiling • blended counselling • occupation information • interoperability with job-search engines	• combination with offline elements • connection with third parties (LMI, PES, etc.) • personalised information storage • e-portfolio
	• occupation information • innovative user profiling • blended counselling	• personalised information storage • interactive online tools • online counselling • online wiki • open source • e-portfolio

Short title (*)	Country	Key lifelong guidance challenges addressed
Career portal of State Employment Agency (SEA)	LV	• career management skills • access to lifelong guidance services • assure the quality of lifelong guidance provision • improve careers information • ICT in lifelong guidance • raise the skills and qualifications of young people • raise the skills and qualifications of adults • improve employability and support older workers • support people at risk and disadvantaged groups
Professions in the picture	NL	• improve matching between skills and jobs • promote self-assessment • aid transition from school education to career selection • improve guidance/employment services • knowledge exchange (among education professionals, guidance counsellors, etc.) • raise guidance awareness • tackle unemployment
Work profiler	NL	• raise guidance awareness • promote self-assessment • tackle unemployment • improve guidance/employment services
Vi@s	PT	• improve matching between skills and jobs • promote self-assessment • aid transition from school education to career selection • improve guidance/employment services • knowledge exchange (among education professionals, guidance counsellors, etc.) • raise guidance awareness • tackle unemployment
Labour market internet guide	SK	• improve matching between skills and jobs • promote self-assessment • tackle unemployment • improve guidance/employment services • aid transition from school education to career selection
KomposyT	SK	• promote self-assessment • aid transition from school education to career selection • provide information on education opportunities • improve guidance/employment services
Employment service	SE	• improve matching between skills and jobs • promote self-assessment • improve guidance/employment services • one-stop-shop • raise guidance awareness • tackle unemployment

	Utilisation of labour market information	Utilisation of ICT
	• effective job matching • occupation information • interoperability with job-search engines • blended counselling	• combination with offline elements • interactive online tools • personalised information storage • online counselling
	• real-time LMI • effective job matching • personalised education advice • innovative user profiling • occupation information • interoperability with job-search engines	• interactive online tools • online wiki • connection with third parties (LMI, PES, etc.) • social media utilisation
	• effective job matching • innovative user profiling • blended counselling	• quick diagnosis tool
	• occupation information • interoperability with job-search engines	• combination with offline elements • interactive online tools • online wiki • connection with third parties (LMI, PES, etc.) • personalised information storage • social media utilisation • e-portfolio
	• occupation information • effective job matching • personalised education advice • innovative user profiling • blended counselling	• combination with offline elements • interactive online tools • connection with third parties (LMI, PES, etc.) • personalised information storage
	• occupation information • innovative user profiling • personalised education advice • blended counselling	• combination with offline elements • interactive online tools • personalised information storage
	• real-time LMI • effective job matching • personalised education advice • blended counselling • occupation information	• combination with offline elements • interactive online tools • mobile application • online wiki • connection with third parties (LMI, PES, etc.) • personalised information storage • social media utilisation • online counselling • open source • e-portfolio

Short title (*)	Country	Key lifelong guidance challenges addressed
Education info	SE	• promote self-assessment • aid transition from school education to career selection • improve guidance/employment services • knowledge exchange (among education professionals, guidance counsellors, etc.) • raise guidance awareness • tackle unemployment
Syvonline	SE	• aid transition from school education to career selection • improve guidance/employment services • knowledge exchange (among education professionals, guidance counsellors, etc.) • raise guidance awareness • increase the interaction between schools and professional life
LMI for ALL	UK	• improve matching between skills and jobs • aid transition from school education to career selection • improve guidance/employment services
National careers service	UK	• improve matching between skills and jobs • aid transition from school education to career selection • promote self-assessment • improve guidance/employment services • tackle unemployment • knowledge exchange (among education professionals, guidance counsellors, etc.) • provide information on education opportunities • raise guidance awareness

(*) To facilitate reading and presentation in tabular format, the original titles of the practices were translated into English short titles where possible.

Conceptually, lifelong guidance refers to 'a continuous process that enables citizens at any age and at any point in their lives to identify their capacities, competences and interests, to make education, training and occupation decisions and to manage their individual life paths in learning, work and other settings in which those capacities and competences are learned and/or used. Guidance covers a range of individual and collective activities relating to information-giving, counselling, competence assessment, support, and the teaching of decision-making and career management skills' (Council of the European Union, 2008). As highlighted by earlier research, lifelong guidance can be considered as a cross-cutting concept for developing education, employment, the young and social policy (ELGPN, 2014b). When it comes to current guidance practices, however,

	Utilisation of labour market information	Utilisation of ICT
	• personalised education advice • blended counselling • occupation information	• combination with offline elements • online wiki • personalised information storage • social media utilisation • online counselling
	• real-time LMI • scientific research on guidance • guidance methods • news relevant to education guidance • matching of regional education to labour market	• combination with offline elements • interactive online tools • online wiki • customised RSS news feed • social media utilisation
	• real-time LMI • occupation information	• interactive online tools • mobile application • connection with third parties (LMI, PES, etc.) • open source
	• real-time LMI • effective job matching • personalised education advice • innovative user profiling • occupation information • interoperability with job-search engines • blended counselling	• interactive online tools • mobile application • connection with third parties (LMI, PES, etc.) • personalised information storage • social media utilisation • online counselling • combination with offline elements • e-portfolio

there is a lack of complete agreement across different countries on the terminology used and the approaches pursued ([1]).

National guidance systems have historically emerged in an incremental way, and have not necessarily developed with a coordinated long-term strategy towards a coherent design of respective lifelong guidance structures and policies. Nowadays, relevant guidance services are frequently provided within different politico-administrative domains, such as education and employment. In most settings, such services tend to be separately organised and delivered by dedicated organisations and their staff, who are separately

([1]) This aspect, among other issues, is being addressed by the European Lifelong Guidance Policy Network (ELGPN) through the Open method of coordination in 2007-15 (http://www.elgpn.eu/)

funded, managed and regulated ([2]). It is no real surprise that the 25 case studies conducted for this study can be related to different politico-administrative implementation domains as well. While some initiatives are primarily driven by stakeholders within the vocational training and employment sector, for example by public employment services, others have been set up or are primarily driven within the realm of national education systems.

However, irrespective of the domain in which they have been established, the individual initiatives usually address multiple challenges when it comes to implementing effective lifelong guidance practices, rather than just a single one. Frequently, a combination of different guidance approaches, types of ICT and LMI tools are used to address these challenges. It is worth looking at each case study from multiple angles to enable the identification of potentially transferrable aspects, not only across countries but also across prevailing domain boundaries. This is supported by a multidimensional summary profile presented for each case study, as explained in more detail in Chapter 2. To enable an initial, high-level structuring, the individual case studies can be grouped according to four main categories reflecting the general thrust of an initiative in question when it comes to high-level aims primarily pursued; however, it is worth reiterating that multiple objectives are usually pursued by a single initiative with help of multiple ICT tools and multiple types of LMI.

Several cases investigated for the purposes of the current study are primarily directed towards aligning personal capabilities and ambitions with job requirements, focusing on guidance provision at national level. Here, a range of tools and LMI tend to be utilised – often in combination – such as self-assessment tools, matching tools, and tools for client-centred presentation of different types of LMI.

Some of the instances investigated are primarily directed towards improving education/occupation guidance processes. Again, different ICT tools and LMI presentation approaches tend to be combined and may include self-guidance tools, tools and LMI for blended guidance, and gamification elements.

Several special-purpose initiatives investigated address specific target groups, such as dedicated subsections of more broadly defined client groupings. Guidance professionals and web developers interested in

([2]) The European Lifelong Guidance Policy Network has developed a dedicated resources kit to support lifelong guidance policy development, cutting across established policy domains and related administrative sectors (ELGPN, 2014a).

developing innovative online applications that help in making publicly funded LMI available within guidance practices, are also targeted in some initiatives.

There are also initiatives particularly aiming at improving guidance practices from a transnational-national perspective. In these the focus is on promoting cooperation among different stakeholders in guidance and education and on facilitating common standards across individual countries.

Table 2 **Case study cluster domains according to high-level aims**

General thrust	Short title (*)	Country
Aligning personal capabilities/ambitions with job requirements	Work profiler	NL
	Occupation development navigator (BEN)	DE
	Career portal of the State Employment Agency (SEA)	LV
	Labour market internet guide	SK
	Employment service	SE
	National careers service	UK
Improving education/ occupation guidance processes	Teens gate	EL
	Anelo.lu	LU
	Professions in the picture	NL
	Education info	SE
	eGuidance service	DK
	Pathfinder service	EE
	Online tools of BiWi	AT
	Education choice tool	BE
	CareersPortal.ie	IE
Special-purpose initiatives	TET-tori	FI
	Syvonline	SE
	ePortfolio	IT
	Kyvyt.fi	FI
	KomposyT	SK
	LMI for ALL	UK
	bib-wiki platform for continuous education counsellors	AT
	Vi@s	PT
Improving transnational guidance	EURES	EU
	Europass	EU

(*) To facilitate reading and presentation in tabular format, the original titles of the practices were translated into English short titles where possible.

CHAPTER 2.

Summaries of the 25 ICT and LMI cases

The summaries aim to serve as compact and concise blocks of information for each of the identified ICT and LMI initiatives, helping quick review of the different initiatives and identifying the ones that could potentially serve stakeholder interests and ICT and LMI needs.

Each summary starts with an overall brief presentation of the initiative and its primary aspects:

(a) its strategic objectives and founding need;
(b) the main target groups it addresses;
(c) the challenges it aims to confront;
(d) the policy objectives it aims to achieve, in accordance with the ELGPN guidelines (ELGPN, 2015).

Should the information seem relevant, the reader can continue to the second and third page presenting:

(a) the innovative aspects of the initiative from an ICT and an LMI perspective;
(b) the results and impact achieved, as recorded by the initiative;
(c) the evaluation process followed;
(d) success factors, as identified by the implementing organisations as well as the users of the service;
(e) a list of points of attention to be considered.

The final page discusses the key transferability points to consider if interested in the possibility to transfer the initiative to a national context.

2.1. ICT and LMI cases of the first domain cluster

General thrust	Short Title	Country
Aligning personal capabilities/ambitions with job requirements	Work profiler	NL
	Occupation development navigator (BEN)	DE
	Career portal of the State Employment Agency (SEA)	LV
	Labour market internet guide (ISTP)	SK
	Employment service	SE
	National careers service	UK

2.1.1. **Work profiler (Werkverkenner): the Netherlands**

http://www.werk.nl

Brief presentation of the Work profiler

- geographic level: national
- founding year: 2013
- type of initiative: public
- is the initiative a single access point? No
- target groups: unemployed
- providing organisation: the public employment service, UWV (Uitvoeringsinstelling Werknemers Verzekeringen)
- stakeholders involved and their role: government; businesses; academia.

Stakeholders were consulted in developing the Work profiler as the tool requires a lot of detailed information on different aspects (such as psychological behaviour and research methods)

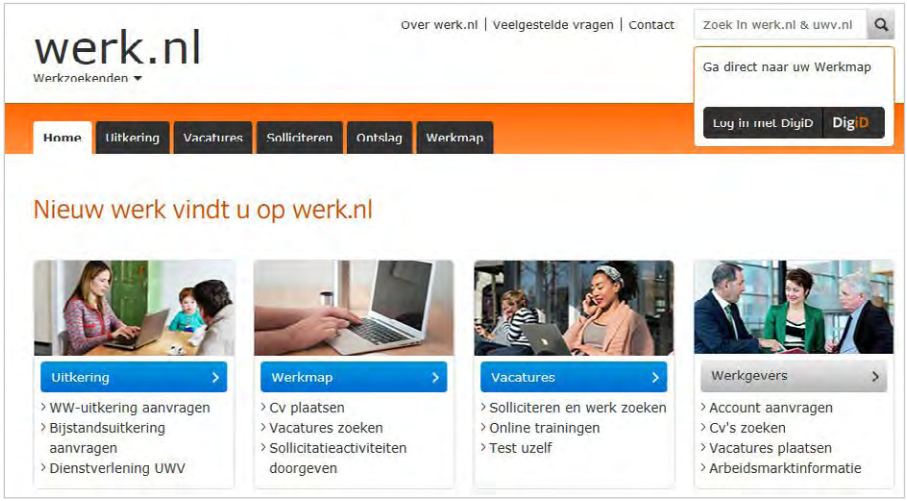
Challenges addressed

- Raise guidance awareness
- Promote self-assessment
- Tackle unemployment
- Improve guidance/employment services

The Work profiler is a selection and diagnosis instrument which aids the UWV to provide tailored service provision to clients on unemployment

benefits. A jobseeker fills in a short questionnaire containing 20 questions within the first three months of unemployment. The Work profiler can only be filled in by jobseekers that have already worked before.

The Work profiler influences the selection of jobseekers towards face-to-face or computerised services by estimating the clients' chances of finding work within a year, while offering a quick diagnosis of the most important obstacles to their return to work and determining the type of services needed to enhance the probability of resuming work in the near future. As such, it is a tool that targets unemployment and improves guidance/employment services.



Policy objectives

- career management skills
- access to lifelong guidance services
- assuring the quality of lifelong guidance provision
- assessing the effectiveness of lifelong guidance provision
- improving careers information
- guidance practitioner training and qualifications

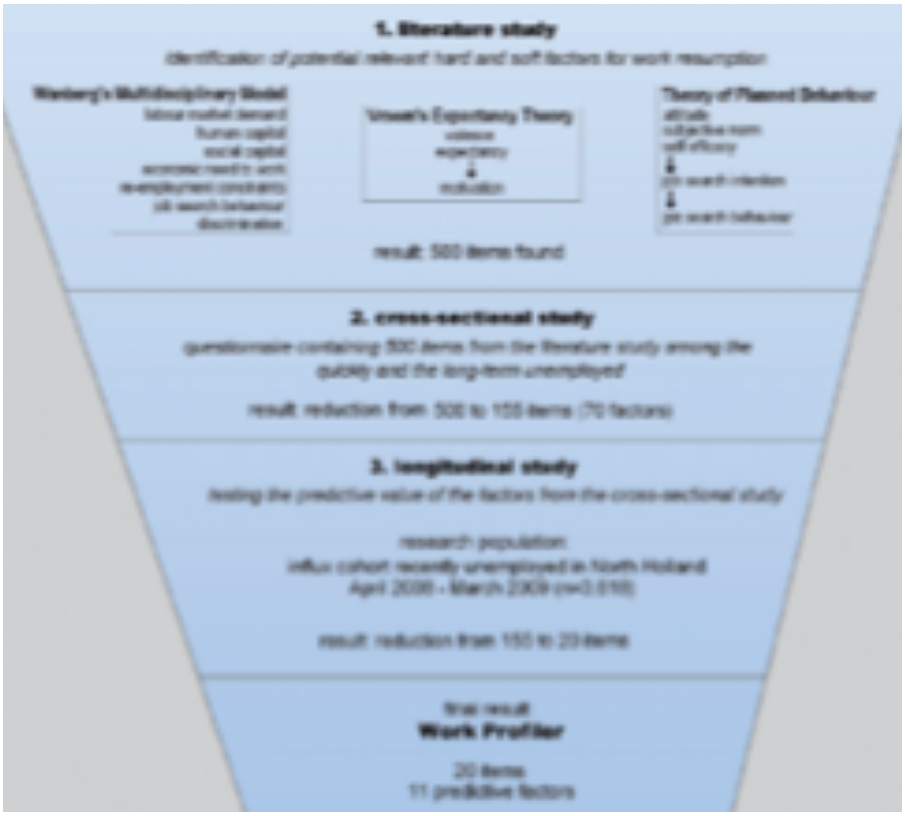
What is the role of LMI and how is it used in the Work profiler?

- Effective job matching
- Innovative user profiling
- Blended counselling

To develop the Work profiler, the predictive factors for return to work had to be identified via a three-stage research approach:

- a literature study, which identified many predictors that can influence the likelihood of finding a job;
- a cross-sectional study, during which the answers of the long-termed unemployed were compared to the answers of individuals who resumed work quickly;
- a longitudinal study, in which a large group of recently unemployed people were followed-up over a period of time to see whether they did or did not resume work.

Once all these factors were identified, the Work profiler was created.



What role does ICT play in the Work profiler?

Quick diagnosis tool

The Work profiler is accessible through an online portal. The work folder (*Werkmap*) allows jobseekers to retain personal files and find online modules that aid in the search for work.

What results and impacts have been achieved by the Work profiler?

Quantitative results: In 2013 the first version of the Work profiler was implemented step-wise in 11 unemployment offices serving as test cases of the total 35. The second version will be implemented in all unemployment offices.

Qualitative outcomes: Implementation of the Work profiler has led to some practitioners behavioural changes. In the past, career guidance services were based on the experience of the work counsellor. With the Work profiler, more evidence-based material is used and counsellors know exactly which aspects should be discussed with the jobseeker. As such, face-to-face services are more structured with the Work profiler serving as a guidance tool for the conversation.

Evaluation process: Jobseekers were approached in April 2014 to take part in an assessment study.

Success factors

- career advice is more 'evidence-based'
- career counsellors provide their help based on scientific solid research

Points of attention

- career counsellors claim that their experience is often better than the results of a survey of 20 questions
- policy-makers question whether 20 questions, mostly 'soft' factors, could help derive the likelihood of finding a job
- some question the fact that the questionnaire includes few questions on LMI and mostly contains 'soft' factors

TRANSFERABILITY ELEMENTS

Socioeconomic/-political context

The initial objective of the Work profiler was to provide career counsellors with a tool that can be used in their guidance activities with jobseekers. Large budgetary cuts meant that face-to-face counselling was substantially reduced in the Netherlands, forcing the UWV to become a more digital organisation in which a multitude of e-services is provided.

Financial requirements

The development costs for the Work profiler mainly comprise personnel costs for maintenance and updating.

Human resources requirements

At UWV, one full-time equivalent (FTE) for three years is sufficient for maintenance and updating. However, the Work profiler 2.0 update demands more FTE as more research must be done.

ICT elements

- the Work profiler is integrated in the personal work folder of the jobseeker guaranteeing privacy. Jobseekers apply for unemployment benefits
- jobseekers fill in the Work profiler link, where the system automatically redirects to the online questionnaire
- answers are automatically processed by the system and a summary report provides an overview for both the jobseeker and the career counsellors

Non-ICT elements

The Work profiler is combined with offline elements as job counsellors and coaches working for UWV use this tool in their contact with the unemployed.

Future developments and trends

- continuous development is needed to keep the tool up to date and reliable
- factors such as policy reform, on the duration of eligibility of unemployment benefits or the size of unemployment benefit, might affect the chances of resuming work
- continuous maintenance and adjustment of this tool is needed to remain usable and reliable

2.1.2. **Occupation development navigator (BEN): Germany**

https://ben.arbeitsagentur.de

Bundesagentur für Arbeit

Brief presentation of the Occupation development navigator

- geographic level: national
- founding year: 2014
- type of initiative: public
- is the initiative a single access point? Yes
- target groups: unemployed; employed looking for a career change; guidance counsellors;
- providing organisation: Federal Employment Agency (BA)
- stakeholders involved and their role: government; businesses.

The BA's public 'online world' is maintained by its ICT unit. Content is provided by different units and by a commercial publishing house. Compliance of BA's online offerings with web accessibility standards is certified by an external party.

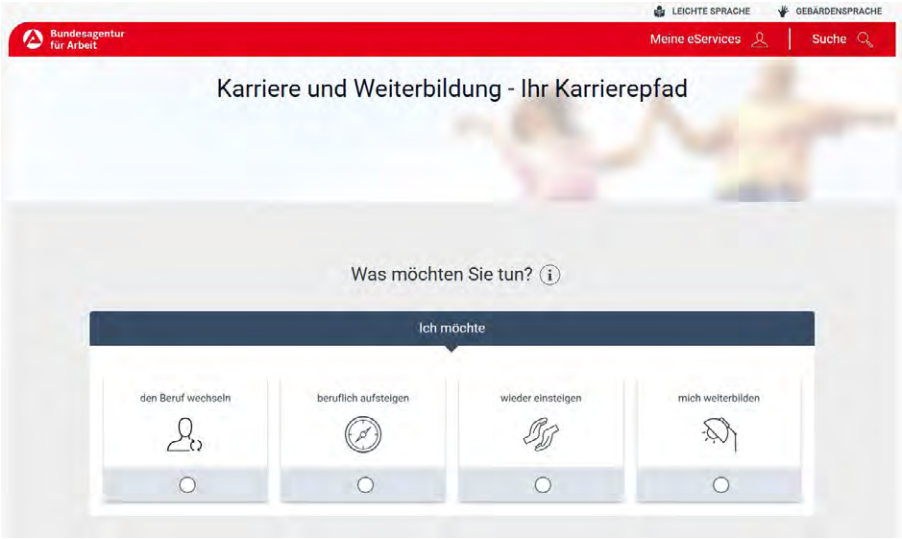
Challenges addressed

- Improve matching between skills and jobs
- Promote self-assessment
- Blended counselling
- Improve guidance/employment services
- Support those wishing to re-enter the labour market

BEN addresses skilled adults who are interested in further developing their professional career. Separate entry paths are provided to different sub-groups: those who wish to change their current profession; those interested in career advancement within their current profession; those who wish to re-enter the labour force after a career break; and those interested in further education opportunities more generally.

The development of BEN supports BA's strategy of exploiting the potential of digital media for participation in the labour market while increasing labour market transparency and speeding up interactions with clients. Through its design as a self-service system, BEN aims at improving career management

skills by empowering users to understand the influence of personal characteristics and external factors on potential career choices. The system is also suitable for support professional counselling by experts.



Policy objectives

- career management skills
- access to lifelong guidance services
- improving careers information
- interactive online tools
- ICT in lifelong guidance
- improving careers information

What is the role of LMI and how is it used in the Occupation development navigator?

- Innovative user profiling
- Occupation information
- Life course related filtering of LMI

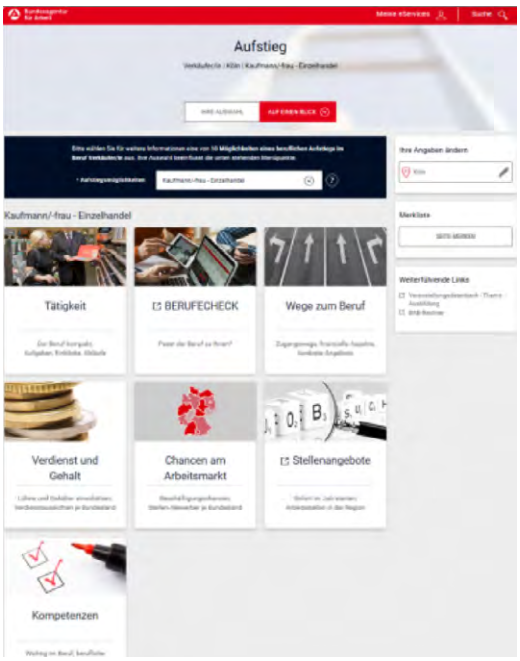
Tailored information is derived from various online sources to match frequently experienced life courses, for example re-entering the labour market following maternity.

Based on key information entered into the online system by the user, those interested in occupation change are provided with extensive descriptions of potentially suitable occupations. Information is provided on required qualifications, legal aspects, earning opportunities, general labour demand and the geographic distribution of current job vacancies. A self-assessment tool helps the user in matching occupation requirements with own work and social behaviour, personal skills, capabilities, interests and ambitions.

Those interested in career progression are provided with a selection of potentially suitable career positions. These are accompanied by a tailored bundle of information aimed at supporting the user in assessing different possibilities for progressing the individual's career.

These include position-related work processes and responsibilities, required qualifications, training opportunities and duration, certificates, financial aspects and wage levels according to geographic regions. A self-assessment tool helps in exploring the user's strengths and experiences when it comes to the potential job position.

Users interested in re-entering the labour market or in further education more generally are provided with a similarly wide range of information and labour market intelligence.



What role does ICT play in the Occupation development navigator?

- **Interactive online tools**
- **Combination with offline elements**
- **Dynamic interconnection of electronic resources according to a life course approach**

- BEN provides self-empowering labour market intelligence to the user by dynamically interconnecting diverse online resources according to frequently experienced life courses.
- Following positive experiences gained with BEN, BA has started to establish an integrated 'online world' as a single-entry point to a variety of online resources and interactive tools previously offered separately.
- The dynamic interconnection of diverse online resources enables effective self-service delivery as well as support to expert counselling through dynamic information retrieval according to what users want to achieve (no need to search for online resources for different purposes).

What results and impacts have been achieved by the Occupation development navigator?

Quantitative results: BA's 'online world' is currently accessed by about 5 000 000 users per month.

Qualitative outcomes: Monitoring of usage patterns suggests that BEN users tend to find more easily information which is of particular relevance to them when compared with practices observed prior its development. Clients are enabled to make better use of labour market information and related tools generally available from BA.

Evaluation process: The development of BEN relied on the systematic involvement of end-users, in accordance with user-centred design techniques. Practitioners were also included in this process from the beginning.

From a strategic perspective, BEN served as a successful test case for the dynamic presentation of online content according to a live-course approach. Based on first experiences gained, BA has started to integrate further online resources into a single 'online world' within which information is dynamically presented according to what different client groups, for example career starters or the unemployed, typically want to achieve.

Success factors

- political willingness to consider developing ICT-based services as a strategic investment for improving public labour market services
- availability of respective financial resources as part of regular BA budget
- a strictly user-centred design approach pursued during the development stage of BEN
- reliance on a large number of existing databases and information sources
- previous experiences gained with the in-house development of various online resources operated by BA prior to the development of BEN supported

Points of attention

The continuous development of BA's 'online world' encounters a great deal of legacy technology along its way. The expertise and effort required for integrating legacy technologies can easily be underestimated.

The integration of BA's public 'online world' with its internal ICT infrastructure at the local job centres poses major infrastructural challenges due to the sheer size of this infrastructure, which connects thousands of work stations throughout the country.

TRANSFERABILITY ELEMENTS

Socioeconomic/-political context

Strengthening of the potential pool of skilled labour in the domestic economy has been identified as a policy priority by the current Federal Government. Addressing skilled adults through a dedicated online tool fits well with BA's long-term strategy and with the policy objectives of the current Federal Government.

Financial requirements

The overall budget of BA's ICT unit amounted to roughly EUR 540 000 in 2016.

Human resources requirements

There is no specific information available on the human resources involved in the development and maintenance of BEN or BA's public 'online world'.

ICT elements

- BA's 'online world' is available as a publicly accessible web service
- certain online features are accessibly only on registration
- the portal complies with national data privacy legislation
- all online offerings maintained by the BA comply with the national web accessibility regulation

Non-ICT elements

A feedback mechanism enables each counsellor to ask for help if he/she experiences difficulties in using the portal.

Future developments and trends

- continuing restructuring of the BA's public 'online world' according to a strictly user-centred approach
- benefits potentially provided by the utilisation of social media for the purposes of career guidance are not taken for granted
- further evidence on potential impacts is to be collated prior to strategic decision-making on whether or not social media are to be systematically used for career guidance purposes

2.1.3. **Career portal of the State Employment Agency (SEA): Latvia**
http://www.nva.gov.lv

Nodarbinātības valsts aģentūra

Brief presentation of the career portal of the State Employment Agency
- geographic level: national
- founding year: 2006
- type of initiative: public
- is the initiative a single access point? Yes
- target groups: unemployed; employed
- providing organisation: State Employment Agency (SEA) of Latvia
- stakeholders involved and their role: mainly government institutions

Challenges addressed
- Improve matching between skills and jobs
- Promote self-assessment
- Aid transition from school education to career selection
- Improve guidance/employment services
- Target unemployment

The career portal aims to make clients more independent and responsible in finding a job and ensure that clients can make more informed choices. In this way, the risk of becoming unemployed in the future can be reduced. This objective is achieved by providing support for planning one's career, by providing job search support, and by introducing labour market information.

Registration is required for people entitled to unemployment benefits and for those participating in support measures such as the voucher training system.

Policy objectives

- career management skills
- access to lifelong guidance services
- assuring the quality of lifelong guidance provision
- improving careers information
- ICT in lifelong guidance
- raising the skills and qualifications of young people
- raising the skills and qualifications of adults
- improving employability and supporting older workers
- supporting people at risk and disadvantaged groups

What is the role of LMI and how is it used in the career portal of the State Employment Agency?

- Effective job matching
- Occupation information
- Interoperability with job-search engines
- Blended counselling

The platform offers labour market information through:

- online self-assessment tools;
- database of education opportunities;
- database of occupation descriptions;
- labour market forecasts by sector, occupation and region.

What role does ICT play in the career portal of the State Employment Agency?

- **Combination with offline elements**
- **Interactive online tools**
- **Personalised information storage**
- **e-portfolio**
- **Online counselling**

- Services fully exploit social media; email counselling is included.
- Self-service by clients: use of career tools, labour market forecasts, application for a job, create CVs, add documents.
- Services for employers: register vacancies free of charge.

What results and impacts have been achieved by the career portal of the State Employment Agency?

Quantitative results: approximately 1 560 career guidance and counselling replies were provided in 2015.

Quantitative results: first, activation measures can be used more effectively; second, the use of the tools brings new information creating better insights into skills mismatch in Latvia; third, career tools help in reducing the risk of becoming unemployed.

Evaluation process: the evaluation system is based on informal feedback and key performance indicators measuring the performance of local offices as a whole.

Success factors

- client-centred approach;
- learning and development approach;
- cost-efficiency approach.

Points of attention

Important economic and social challenges in Latvia, such as emigration, the position of groups at risk on the labour market and informal economy. Returning emigrants can be provided with specific labour market information. Relatively high requirements for digital literacy.

TRANSFERABILITY ELEMENTS

Socioeconomic/-political context

The development of the SEA portal was triggered by the overall movement towards e-governance in Latvia. During the 1990s Latvia had career centres specialised in career education and guidance, which were later integrated

into SEA, resulting in different types of counsellors: employer agents, job counsellors and career counsellors.

Financial requirements

The portal depends financially on two main sources: European subsidy programmes for investment and development costs, and the general SEA budget for maintenance, updating and further development issues.

Human resources requirements

The career portal is developed by an information systems team and the job search support division at the central office; there are 70 career counsellors in the local offices, characterised by higher education in psychology and social sciences, fluent in Latvian and Russian, ICT literacy, a client centred attitude, high ethical standards, good social skills and relevant experience.

ICT elements

There are four different systems behind the career portal tools at SEA level: the career part of the SEA portal, the system for self-service provided by the portal, a system running the vacancy databases, and an internal system. The systems operated by SEA are connected to other national databases.

Non-ICT elements

- regular training available for career counsellors;
- face-to-face career guidance and job counselling, complemented with contact by telephone;
- several stakeholders engaged in the development of the career portal and the labour market information.

Future developments and trends

- continuous improvement process by SEA;
- integrate short-term, mid-term and long-term forecasts into the labour market forecast tool;
- improve the integration of education information;
- make the portal more comprehensive;
- continue to use social media to provide general information about its services.

2.1.4. **Labour market internet guide: Slovakia**

https://www.istp.sk

Brief presentation of the Labour market internet guide

- geographic level: national
- founding year: 2012
- type of initiative: public
- is the initiative a single access point? Yes
- target groups: unemployed; employed looking for a career change; guidance counsellors; school students
- providing organisation: Central Office of Labour, Social Affairs and Family stakeholders involved and their role: government; businesses; academia; civil society; other. The technical administration of the platform is subcontracted to a commercial party. Different national and international parties collaborate with the platform to create content.

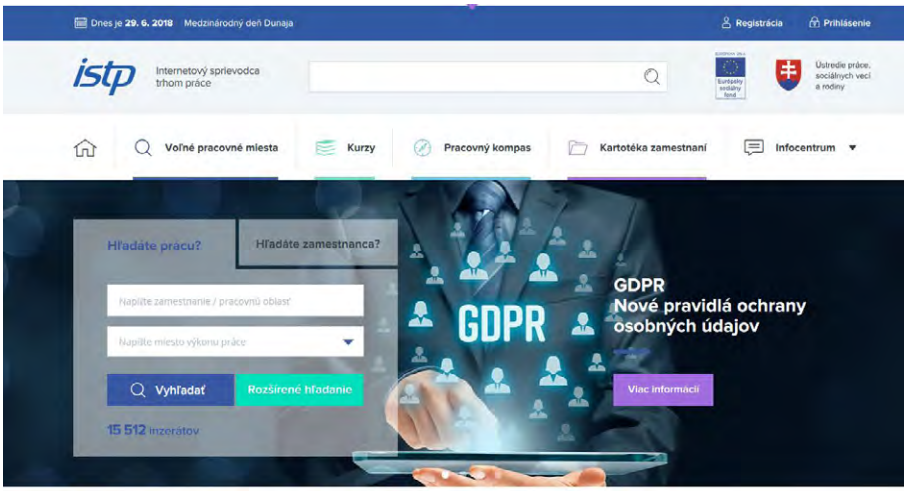
Challenges addressed

- Improve matching between skills and jobs
- Promote self-assessment
- Target unemployment
- Improve guidance/employment services
- Aid transition from school education to career selection

The Labour market internet guide is an integrated online platform. It provides various functionalities to support electronically a multi-staged counselling model adopted by the national employment service.

Counsellors are supported in the delivery of one-to-one guidance, for example by an online self-assessment tool used for shared reflection with clients on their personal capabilities and aspirations. Job placement is also supported, for example by the interconnection of personal client profiles with a vacancy database. Online exchange between job seekers and employers is possible. A self-service area is directed towards job seekers and those generally interested in the labour market. Adult users, whether unemployed or interested in career development, are supported by automated matching of their personal profile with job opportunities, effectively a self-assessment

tool. Young people leaving school and their partners are supported by a career guidance online tool (Job compass).



Policy objectives

- career management skills;
- access to lifelong guidance services;
- assuring the quality of lifelong guidance provision;
- ICT in lifelong guidance;
- supporting people at risk and disadvantaged groups;
- improving careers information.

What is the role of LMI and how is it used in the Labour market internet guide?

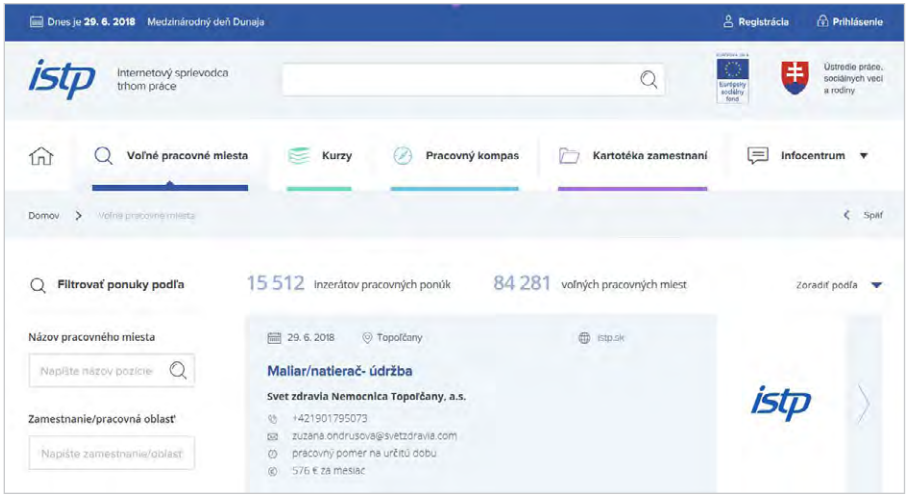
- Occupation information
- Effective job matching
- Personalised education advice
- Innovative user profiling
- Blended counselling

The platform is a single-entry point to LMI and related online tools. A range of career information is made available through the platform, including video material on occupations coupled with text items and illustrative pictures. Together, these provide an overview of the historical development of a given occupation, frequently used terminology and core activities typically

performed. This is complemented by information on current wage levels and trends in labour demand. Large employers are presented for some fields.

Various databases are featured, either in terms of simple information provision or feeding interactive online tools. These include databases on norms concerning regulated professions, required experience for regulated professions, personality types, and a competence model. Parts of the information generally available are specifically tailored to pupils, students, their parents and school counsellors. A self-assessment tool is linked to the matching of occupation profiles with the personal profile of the user, ultimately helping the client in developing a realistic self-picture about job-related competences and aspirations.

Upon registration, an online guidance tool is available. Based on a set of electronic questionnaires concerning personal skills, qualifications, work experience and health status users can create a personal profile. The system matches the personal profile of those looking for job opportunities with current job vacancies posted by employers. For registered pupils and students, the system matches the personal profile with occupations and education institutions that prepare for a particular occupation. Registered employers can actively search a database of registered job applicants, including a personal profile published in the system, with prior consent of the profile owner. Employers can directly contact those candidates meeting their selection criteria. The system is designed for supporting both self-service and blended counselling by professionals.



What role does ICT play in the Labour market internet guide?

- **Combination with offline elements**
- **Interactive online tools**
- **Connection with third parties (LMI, PES, etc.)**
- **Personalised information storage**

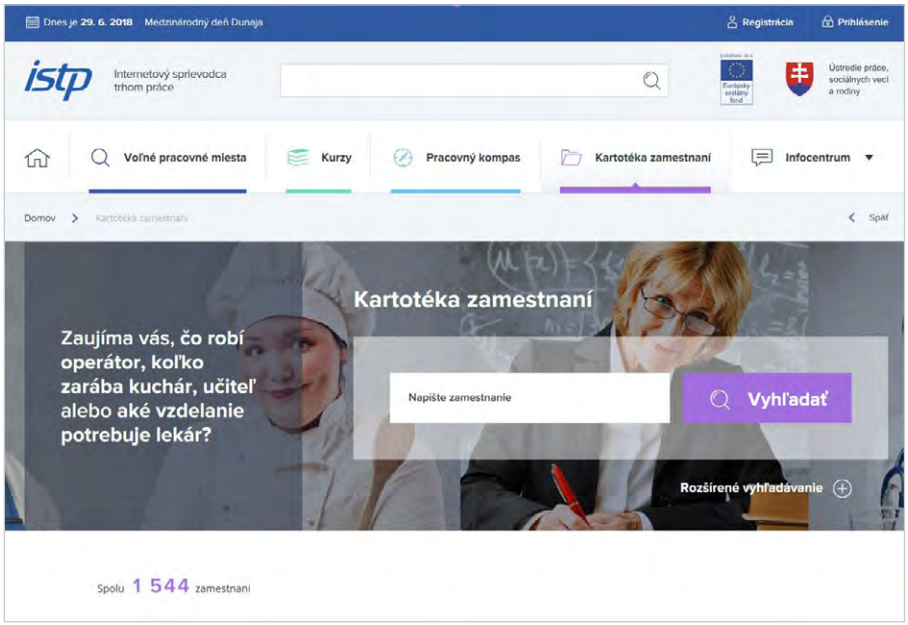
- the platform features online content in different formats including text based information and multimedia content.
- users are enabled to explore the online environment through a flexible menu structure, while interactive online features enable deeper insights into selected occupation fields.
- personal information stored in the electronic profile can be used in combination with an offline job application. A printed version can be retrieved for use in a postal job application. Alternatively, the profile can be used when replying to suitable job offerings electronically.
- the functionalities are partly enabled by interlinking the ISTP platform with external information systems.

What results and impacts have been achieved by the Labour market internet guide?

Quantitative results: the number of unique visitors increased from about 10 000 per month in 2012 to 200 000 monthly visitors today. In 2016, the number of job advertisements was 10 000 to 12 000 per month.

Qualitative outcomes: anecdotal evidence suggests that the bureaucratic burden seems to have been reduced significantly for citizens, employers, and business entities; access to the services provided by district offices also seems to have improved.

Evaluation process: repeated rounds of user testing have been carried out during the development phase of the ISTP platform. Outcomes were fed back into the development cycle. Beyond these activities, no dedicated user evaluation or systematic impact assessment has yet taken place.



Success factors

- political willingness to invest continuously in improving labour services with help of ICT;
- the leading role of the Central Labour Office in translating process-related requirements emerging from day-to-day counselling practices and related workflows into technical requirements to be met by the technology developers;
- involvement of a range of stakeholders in a dedicated body supervising an operational implementation team and in various thematic expert teams;
- the coupling of technology innovation with service delivery process innovation;
- efforts made to ensure that all staff involved in the ICT-supported delivery of the services have the necessary skills, and feel comfortable using the ICT infrastructure;
- achieving a high level of usability of the user interface.

Points of attention

- a great deal of legacy technology encountered by this modernisation project along its way in terms of existing databases and data processing systems, ultimately requiring a step-wise integration strategy to lower the risk of loss of service (and data) continuity;
- availability of financial resources required for the development of digital solutions throughout the step-wise integration process;
- a noticeable share of the population currently not having access to a suitable online connection.

TRANSFERABILITY ELEMENTS

Socioeconomic/-political context

Measures to address a comparatively high level of unemployment have been on the Slovakian policy agenda for many years.

There was a perceived need for modernising, optimising and expanding the delivery of a comprehensive range of consultancy services addressing job seekers and employers.

Emphasis was put on enabling individualised support specifically tailored to the client's needs, with a view to facilitating jobseeker activation and employability.

Legally defined duties of the public employment service had to be taken into account.

Financial requirements

Between 2015 and 2018 costs related to the operation, maintenance and further development of the platform were EUR 3 462 912. These are covered by the Ministry of Labour, Social Affairs and Family of the Slovak Republic.

Human resources requirements

No quantitative information is available on the human resources involved in the incremental development process of the ICT platform and the related service process changes.

ICT elements

The ISTP online platform is part of the intra-organisational ICT system of a country-wide network of district offices. The system supports the delivery of social and employment services in accordance with legally defined public duties. The portal maintenance is subcontracted to an external service provider.

Non-ICT elements

- the implementation of the platform was accompanied by a massive training effort directed at the target user groups, including professionals working at local labour offices, the district offices, and employers;
- assisted access through public computer terminals is available to visitors of the district offices;
- awareness raising measures were, and are still, conducted by the central office, for example at relevant events and through information materials.

Future developments and trends

Penetration levels of social media are anticipated to deserve further attention in the future. Currently, hyperlinks to Facebook, Twitter and YouTube are used for directing users to the ISTP platform, but such media may become increasingly relevant for maintaining a relationship between the district offices and their clients. However, a carefully planned strategy may be required to avoid risks potentially associated with more extensive utilisation of social media technologies.

2.1.5. **Employment service: Sweden**

https://www.arbetsformedlingen.se

ARBETSFÖRMEDLINGEN
SWEDISH PUBLIC EMPLOYMENT SERVICE

Brief presentation of Arbetsförmedlingen

- geographic level: national
- founding year: 2008
- type of initiative: public
- is the initiative a single access point? No
- target groups: young people (16 to 25) unemployed; employed looking for a career change; immigrants; career counsellors
- providing organisation: Swedish public employment service (PES)
- stakeholders involved and their role: businesses; academia; civil society; local authorities; career and education guidance providers; labour market partners, trade organisations; social sector; public employment offices of other EU Member States.
  The engagement of stakeholders in the development and provision of LMI led to the creation of tools that offer adequate and efficient guidance.

Challenges addressed

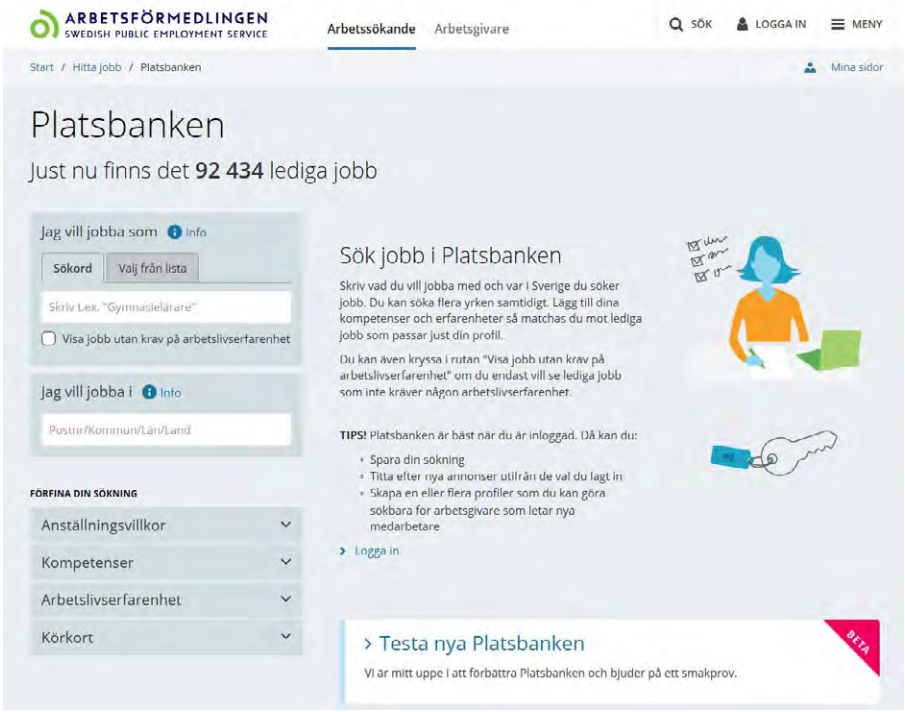
- Improve matching between skills and jobs
- Promote self-assessment
- Improve guidance/employment services
- Raise guidance awareness
- Tackle unemployment

Arbetsförmedlingen is used by jobseekers, employers and guidance practitioners and aims to support the effectiveness and efficiency of the labour market.

The digitisation of the PES has put the largest part of the agency services available online, and Arbetsförmedlingen is fully embedded in PES operations.

Arbetsförmedlingen offers various ICT tools:

- job bank;
- webinars;
- podcasts;
- personal web meetings;
- self-registration and appointment scheduling;
- online tests (choose a profession, interest test, future and career, self-estimation of skills);
- career compass;
- occupations A-Z;
- videos;
- CV database.



Policy objectives

- career management skills;
- access to lifelong guidance services;
- assuring the quality of lifelong guidance provision;
- strategic leadership;
- improving careers information;
- training and qualifications for guidance practitioners;
- ICT in lifelong guidance;
- raising the skills and qualifications of adults;
- improving employability and supporting older workers;
- supporting people at risk and disadvantaged groups.

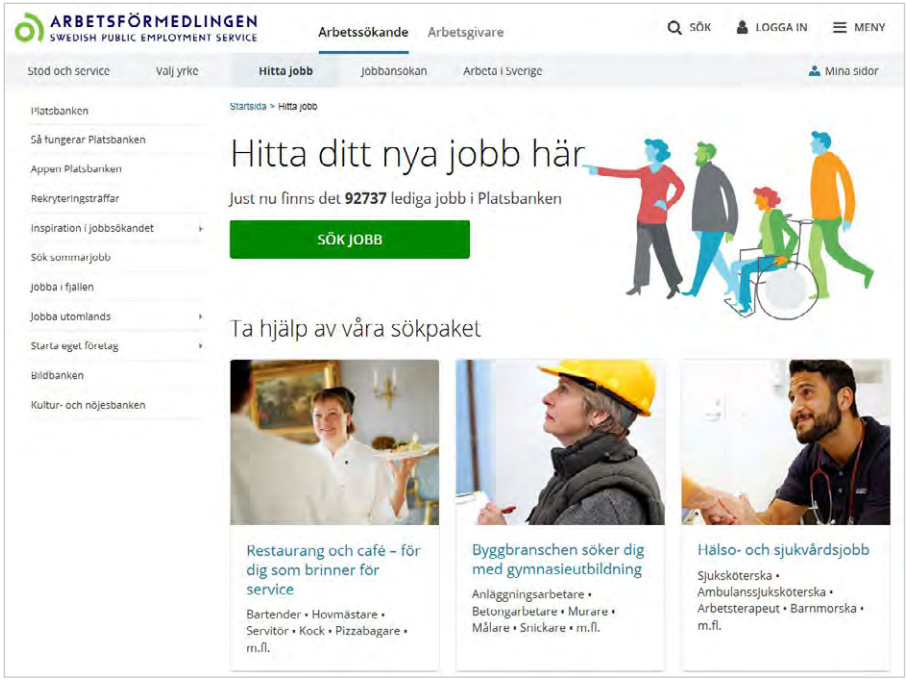
What is the role of LMI and how is it used in Arbetsförmedlingen?

- Real-time LMI
- Effective job matching
- Personalised education advice
- Blended counselling
- Occupation information

Labour market information is the heart of Arbetsförmedlingen, supported by the use of ICT:

- job bank: pool of 80 000 vacancies, connected with businesses to transfer job advertisements automatically;
- webinars: guidance on CV writing, use of social media in job searching, interview preparation, etc.
- podcasts: aim to enhance the competences and skills of the jobseekers;
- career compass: labour market forecasts, demonstrating the prospects of 200 occupations;
- the occupations A-Z tool: LMI data from the Statistics Sweden and from experts within trade unions;
- CV database: information on the profiles of people who seek employment in Sweden and effective matching in the Swedish labour market;
- PES videos: descriptions of occupations and other LMI – including a content management system – that aim to increase the employability potential of jobseekers.

Much of the LMI provided is produced in-house, by the analysis department. The main external sources of LMI are employers, jobseekers, trade unions, the Statistics Sweden, higher education institutes and public sources of statistics and reports.



What role does ICT play in Arbetsförmedlingen?

- **Combination with offline elements**
- **Interactive online tools**
- **Mobile application**
- **Online wiki**
- **Connection with third parties (LMI, PES, etc.)**
- **Personalised information storage**
- **Social media utilisation**
- **Online counselling**
- **Open source**
- **e-portfolio**

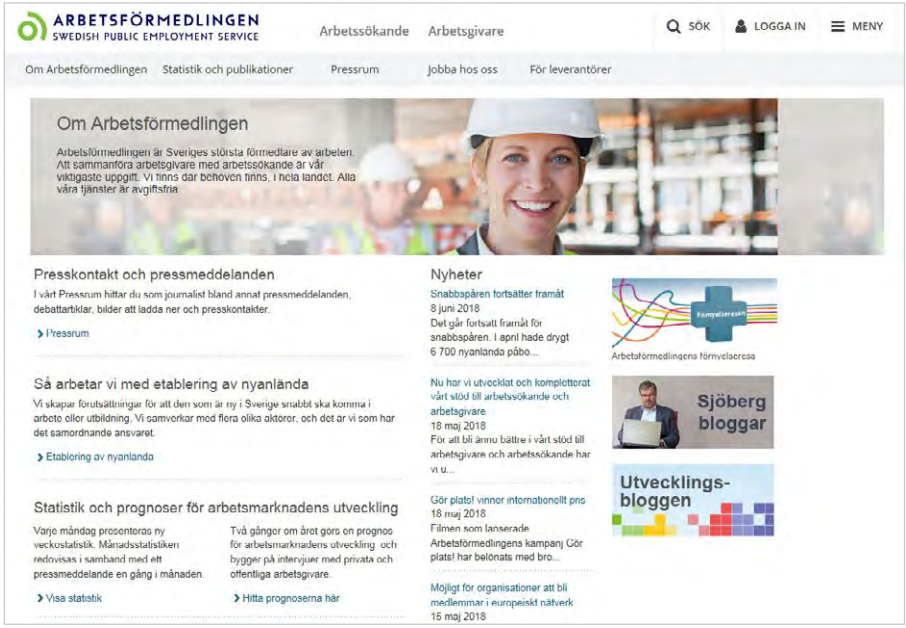
- Arbetsförmedlingen provides information and assistance via simple and mainstream software that allows online provision of services;
- the use of the Arbetsförmedlingen ICT tools does not require specific skills from the users, though PES practitioners are offered training on these tools;
- tools are also available also via mobile devices, such as smartphones and tablets;
- several application programme interfaces (APIs) have been developed to ease the access of other organisations to the data and information available.

What results and impacts have been achieved by Arbetsförmedlingen?

Quantitative results: in 2015 the practice had more than 4.4 million monthly users and around 1.8 million unique visitors per month.

Qualitative outcomes: Arbetsförmedlingen has had some impact on youth unemployment, and the proportion of newly arrived people who entered work life or education increased in 2015. The practice also affected the performance and work process of PES practitioners, as it gave agency practitioners more free time to deal with new needs that emerge.

Evaluation process: jobseeker and employer satisfaction surveys; PES also compares the results of these assessments to results of other delivery methods (face-to-face and telephone).



Success factors

- the management model;
- the gradual – small step – progress of digitisation;
- the service design process is user-centric and LMI provision is based on user needs;
- the ICT tools have an informal character, are modern and easy to use;
- emphasis is on provision of the content management system;
- the quality of guidance and LMI provided and the methodologies implemented for the development of the tools;
- the engagement of several different stakeholders in the development and provision of LMI;
- the constant financial support from the government.

Points of attention

- difficulty in measuring customer satisfaction;
- not all users adequately informed;
- complex information;
- low response rates might jeopardise the proper function of the forecasts;

- ICT tools do cover unpublished jobs, so they do not appear on the job bank tool;
- higher level of integration of education paths with vocational paths;
- agency need for a common ground and a reference point for future ICT developments.

TRANSFERABILITY ELEMENTS

Socioeconomic/-political context

Arbetsförmedlingen is highly compatible with the structure of the Swedish lifelong guidance system; it has become fully integrated in the service delivery channels of PES, which is one of the key actors of the Swedish lifelong guidance system.

Financial requirements

The annual budget of the Digital Services Department, responsible for the development and maintenance of the PES e-services, is SEK 132 billion, which comprises of SEK 112 million for maintenance and SEK 20 million for investment costs.

Human resources requirements

The responsible department had 95 employees in 2016 across six units, all structured in a similar way.

The LMI is produced internally by the PES department of analysis, comprising economists, political scientists, statisticians and staff with other education background.

Many employees hold PhD titles and have strong research experience.

The PES guidance practitioners go through intensive in-service training, designed as gradual and blended learning and offered via physical and online training courses.

ICT elements

- availability of platform for mobile devices, such as smartphones and tablets.
- development of APIs to ease access of organisations to PES data and information.
- a high level of digital literacy with the development of web, mobile and social media applications and awareness of service design is required from the staff. Users and practitioners do not need high digital skills.

Non-ICT elements

Cooperation of the agency with its stakeholders is crucial to the goal of providing meaningful and up-to-date LMI and quality guidance services.

Future developments and trends

- modernise and unify the agency ICT systems;
- more ICT and LMI tools and additional e-services by other organisations that will take advantage of the PES open data policy;
- new data exploitation ways that will offer better understanding of different target groups and will lead to higher customisation of the e-services and to an improvement in labour market matching efficiency;
- stronger investment in marketing campaigns for the outreach of the practice to employers and external practitioners;
- modernise survey techniques used for job forecasts.

2.1.6. **National careers service: the UK**

https://nationalcareersservice.direct.gov.uk

National Careers Service

Brief presentation of the National careers service

- geographic level: national
- founding year: 2012
- type of initiative: public
- is the initiative a single access point? Yes
- target groups: pupils over 13, universal service with a focus on priority groups
- providing organisation: the National careers service is delivered through eleven prime contractors in 12 geographic areas
- stakeholders involved and their role: government.
  Jobcentre+, local enterprise partnerships are involved in the practice for differing reasons; stakeholders and their roles vary depending on locality and on the kind of public services or community centres existing in the area.

Challenges addressed

- Improve matching between skills and jobs
- Aid transition from school education to career selection
- Promote self-assessment
- Improve guidance/employment services
- Tackle unemployment
- Knowledge exchange (among education professionals, guidance counsellors)
- Raise guidance awareness

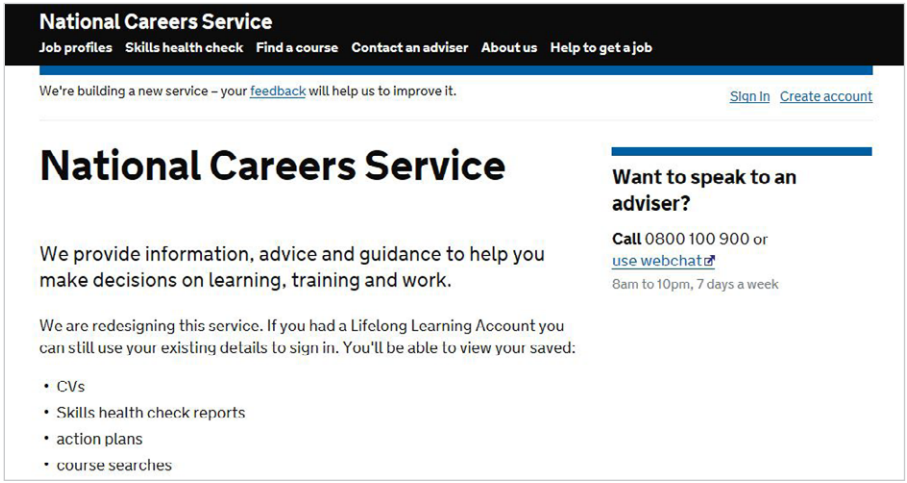
Policy objectives

The National careers service aims to increase the number of people in employment, improve skills levels and make a difference to people's lives, helping individuals, communities and businesses to succeed. Services associated with the service include:

- the digital service, including the website, online careers tools, lifelong learning account, job profiles, webchat and social media;
- area-based services: confidential and impartial advice, supported by qualified careers advisers in local centres;

- local labour market information and brokerage services for schools, employers, higher/formal education institutions and other intermediary organisations.

The National careers service (particularly area-based services) is slanted towards users with the greatest need, which often means that their ability to choose their own career is less than other groups. Besides progression into employment and learning, a main focus of the service is empowerment of users and identifying the transferable skills that can help in assessing new options.



Policy objectives

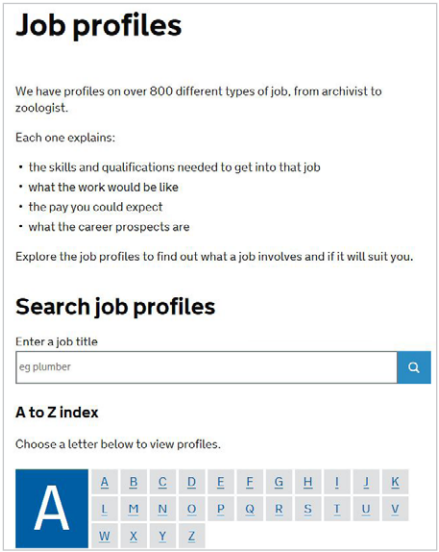
- career management skills;
- access to lifelong guidance services;
- assuring the quality of lifelong guidance provision;
- strategic leadership;
- improving careers information;
- guidance practitioner training and qualifications;
- assessing the effectiveness of lifelong guidance provision;
- ICT in lifelong guidance;
- raising the skills and qualifications of young people;
- raising the skills and qualifications of adults;
- improving employability and supporting older workers.

What is the role of LMI and how is it used in the National careers service?

- Real-time LMI
- Effective job matching
- Personalised education advice
- Innovative user profiling
- Occupation information
- Interoperability with job-search engines
- Blended counselling

Each National careers service contractor is responsible for bringing all their regional/local LMI together for public access. The localised LMI is informed by various sources, such as local enterprise partnership labour market reports, local LMI networks, local businesses and industry. It is accessed by career advisers online through a monthly bulletin and reports.

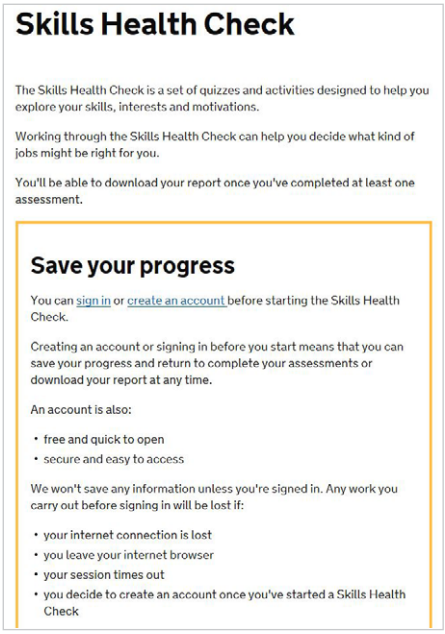
The digital service aimed at the public uses LMI quite differently. It is informed by various data sources such as the National audit office, the Office for National Statistics. The LMI includes data on job profiles, qualifications, etc., which feeds into a set of user-friendly tools



What role does ICT play in the National careers service?

- **Interactive online tools**
- **Mobile application**
- **Connection with third parties (LMI, PES, etc.)**
- **Personalised information storage**
- **Social media utilisation**
- **Online counselling**
- **Combination with offline elements**
- **e-portfolio**

- comprehensive online portal offering supportive tools;
- after free registration, results and records from all tools can be permanently stored in a lifelong learning account;
- course search tool for exploring an extensive course database ranging from apprenticeships to flexible learning courses;
- dedicated funding advice section;
- skills health check tool;
- online quizzes;
- action plan tool;
- job profile database currently containing 800 files;
- advice from trained counsellors is available via web chat and email.



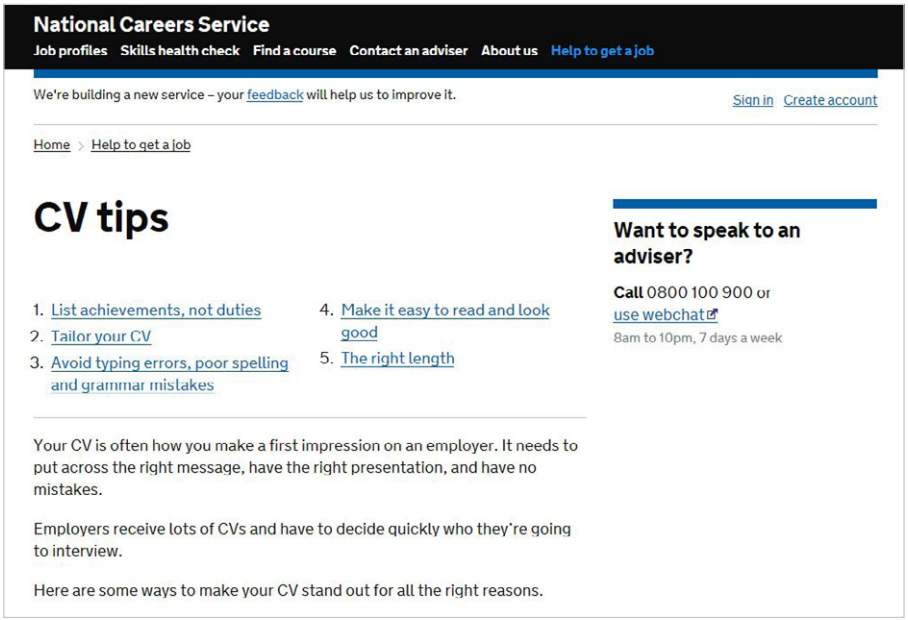
What results and impacts have been achieved by the National careers service?

Quantitative results: In 2014 the following national figures for the unique services were reported: face-to-face 5 592; telephone 3 203; online 9 476.

Qualitative outcomes: Of the above sessions, 50% of the clients had progressed in employment (significantly higher than the 46% in year 2), through changing jobs/getting a job (32%, up from 29% in year 2), taking up voluntary work (19%), changing career (16%) or achieving a pay rise or promotion (11%). Face-to-face and telephone advice customers were more likely to have achieved employment progression (51% and 50%) than telephone information customers (45%).

Evaluation process: All contractors are obliged to support Skills Funding Agency requests to participate in customer satisfaction and progression surveys and other research and evaluation programmes. The 'payment by results' funding model means that contractors are required to capture information about each client at three specific stages to receive payment: on completion of a customer satisfaction survey and action plan (after the first

session), on completing the action plan, and on progression into work and learning (for at least three months).



Success factors

The National careers service is considered a success on many levels. Following publication of the service satisfaction and progression surveys annual report, Joe Billington, the Director of the service, said that 'the results of the survey are truly remarkable and emphasise the value that the National careers service adds to people's lives and careers'. The online tools, in particular, the skills health check, the CV builder and the job profiles, are well respected by careers professionals nationally and internationally. Contractors are encouraged to promote positive case studies to inspire potential users and celebrate success, encouraging potential clients to use the service.

Points of attention

- Political changes: the service should be agile enough to respond to changes effectively
- Increased digitalisation of the service in terms of adviser skills and maintenance of websites.
- Payment by results funding model: results are difficult to evidence.

TRANSFERABILITY ELEMENTS

Socioeconomic/-political context

When the National careers service was launched in 2012, the national unemployment rate averaged around 8%. The (then) Skills Minister, John Hayes, said: 'With competition for jobs fiercer than ever, now is the time to introduce a careers service that will deliver on its promise…Making available the right advice at the right time and in the right places is to strike a blow for social mobility, social cohesion and social justice – a society that encourages people from wherever they start to journey to the destination of their dreams'. Since its launch the service has been delivered in accordance with contractual guidelines and priorities set out by Business Innovation and Skills (BIS) in its annual letter to the Skills Funding Agency.

Financial requirements

The National careers service is not a profit-making contract; most contractors tend to break even with funding only just covering costs. The main costs for prime contractors tend to be associated with staff and ancillary costs such as marketing, phone service and premises.

Human resources requirements

National careers service centres employ a range of staff, from qualified professional career advisers and coaches to administrators, marketing staff and managers. Advisers must have a level 4 diploma in career information and advice and a level 6 diploma in career guidance and development.

ICT elements

- A single contractor runs the website and the web chat facility and takes basic phone calls from a national 0800 number.
- Fixed terminals and laptops are in place for advisors to record information about clients; customers have access to computers in public areas.
- Contracted organisations must ensure that data is captured through a robust data management system developed according to the contractual guidelines of the service.
- Employees must ensure that all systems used to access, process, transmit or store personal data are implemented in accordance with the contract and conform to government guidelines on security.

Non-ICT elements

- The National careers service supports many different types of customer, using various delivery methods (face-to-face, telephone, online) to respond to different needs.
- Qualified career professionals use their professional judgement on appropriate methods and tools for integrating LMI into their delivery.

Future developments and trends

- clearer focus on supporting specific priority groups and less face-to-face activity for customers who should be signposted to the website and telephone service
- continuation of the greater focus on the role of employers involved in career guidance and education

2.2. ICT and LMI cases of the second domain cluster

General thrust	Short Title	Country
Improving education/ occupation guidance processes	Teens gate	EL
	Anelo.lu	LU
	Professions in the picture	NL
	Education info	SE
	eGuidance service	DK
	Pathfinder service	EE
	Online tools of BiWi	AT
	Education choice tool	BE
	CareersPortal.ie	UK

2.2.1. **Teens gate: Greece**

http://www.eoppep.gr/teens/

Brief presentation of Teens gate

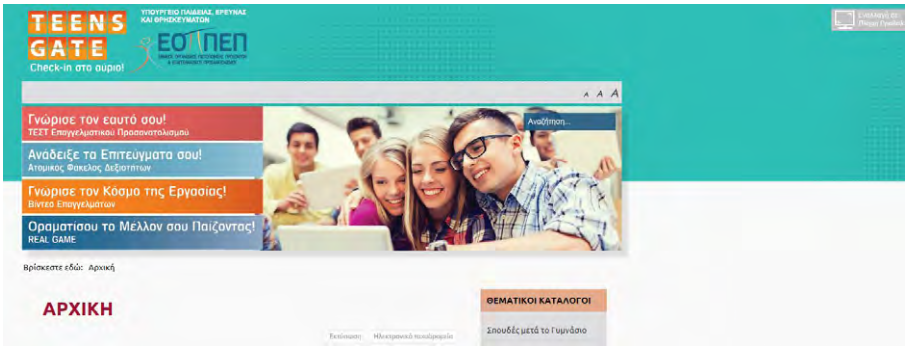
- geographic level: national; EU
- founding year: 2012
- type of initiative: public
- is the initiative a single access point? Yes
- target groups: adolescents 12 to 24 years old; parents; teachers; career counsellors
- providing organisation: National Organisation for the Certification of Qualifications and Vocational Guidance (EOPPEP)
- stakeholders involved and their role: parents and teachers; guidance practitioners; public organisations, social partners, education Institutions. The role of public organisations, social partners and education institutions is essential in terms of providing data which can be translated into reliable and up-to-date LMI.

Challenges addressed

- Improve matching between skills and jobs
- Promote self-assessment
- Aid transition from school education to career selection
- Improve guidance/employment services
- Knowledge exchange (among education professionals, guidance counsellors, etc.)
- Raise guidance awareness
- Tackle unemployment

Teens gate provides adolescents and youngsters with meaningful labour market information and guidance tools to support them in selecting an appropriate education and career path. It offers:

- self-administered vocational orientation tests;
- personal electronic skills portfolios;
- labour market status, trends and regulations;
- empowerment and motivation via interactive games;
- a convenient communication pathway for scheduling appointments with guidance counsellors across Greece;
- awareness of career guidance services in Greece as well as abroad.



Policy objectives

- career management
- access to lifelong guidance services
- assuring the quality of lifelong guidance provision
- assessing the effectiveness of lifelong guidance provision
- strategic leadership
- improving careers information

- guidance training and qualifications
- funding lifelong guidance services
- ICT in lifelong guidance
- raising the skills and qualifications of young people
- raising the skills and qualifications of adults
- improving employability and supporting older workers
- supporting people at risk and disadvantaged groups

What is the role of LMI and how is it used in Teens gate?

- Real-time LMI
- Effective job matching
- Personalised education advice
- Innovative user profiling
- Blended counselling
- Occupation information

Labour market information is manually collected, processed and featured at Teens gate by practitioners of the Division for Career Guidance and Counselling of EOPPEP;

Sources include information, data and documentation (such as statistics, survey reports, studies and analyses) provided by:

- national public authorities, such as the Ministry of Education, Research and Religious Affairs and the Ministry of Labour, Social Insurance and Social Solidarity;
- independent public or semi-public organisations, such as the Hellenic Statistical Authority and the Greek public employment service, OAED;
- other relevant social partners including associations, networks and research centres, such as the General Confederation of Greek Workers, the Hellenic Federation of Enterprises, the network of Greek universities, the Chamber of Commerce.

What role does ICT play in Teens gate?

- Combination with offline elements
- Interactive online tools
- Online wiki
- Connection with third parties (LMI, PES, etc.)
- Personalised information storage
- Online counselling
- e-portfolio
- Open source

The Joomla content management system serves as the Teens gate platform. As a result, the platform offers a series of convenient features such as page caching, RSS feeds, easy content editing, advanced search functions and multi-language support. More important, it provides practitioners with the opportunity to upload information without the need for specialised technical knowledge (such as programming).

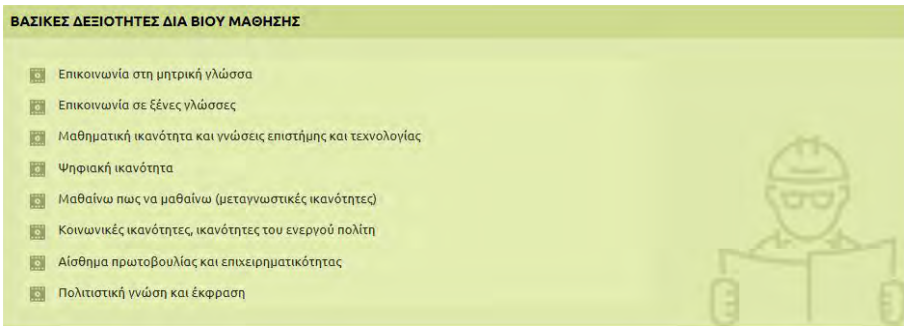
What results and impacts have been achieved by Teens gate?

Quantitative results: Teens gate registered users surpassed 560 000 in 2016, nearly 69% more than 2015. The vocational orientation tests are the most preferred (53%) features among users, followed by the thematic information catalogues (29%) and the 'Ask the counsellor' section of the web portal.

Qualitative outcomes:

- improved access of young people to free-of-charge career guidance services;
- addressed the career guidance and information needs of young people who face challenges in terms of mobility (people with limited mobility) or life in rural areas of Greece;
- supported the provision of personalised guidance services across Greece via appropriate ICT tools;
- enhanced the knowledge and skills of career guidance practitioners;
- improved networking and cooperation among guidance professionals and stakeholders, aiming at developing demand-driven LMI and guidance properly adapted to the national context of Greece.

Evaluation process: An external evaluation was delegated to an independent organisation, and the results were used for improving the portal.



Success factors

- neutral, reliable and up-to-date LMI
- need-driven development aimed at addressing actual social and infrastructure challenges
- scientific background and expertise, willingness and motivation of the practitioners
- increasing level of ICT digital literacy among adolescents and young people in Greece
- strong scientific background and research-fuelled validity of the tools, aligned with the latest advances in guidance and relevant EU guidelines
- free-of-charge information and tools
- high level of cooperation with stakeholders
- targeted promotion efforts to raise awareness and foster the effective use of Teens gate

Points of attention

- fragmented labour market information sources
- cultural aspects hampering the adoption of the practice among users

TRANSFERABILITY ELEMENTS

Socioeconomic/-political context

Teens gate operates within the legal and regulatory framework underpinning all EOPPEP activities. The vital role of ICT and LMI is acknowledged by Greek policy-makers, despite the adverse national economic context.

Financial requirements

The development of Teens gate involved a budget of EUR 965 000, covering the development training of administrators and procurement of necessary equipment.

Human resources requirements

Four practitioners of the Division for Career Guidance and Counselling are tasked with the implementation.

All are required to possess at least a master level of education in guidance and counselling. Additional skills include a high level of digital literacy and expertise in the application of ICT in lifelong guidance practices, and knowledge of the national education system and labour market.

ICT elements

The technological infrastructure required includes simple and widely used software and equipment for developing and maintaining a web portal. The platform employed is Joomla, which allows practitioners who serve as editors to upload information without the need for specialised technical knowledge.

Non-ICT elements

Teens gate is combined with physical meetings performed by guidance counsellors. EOPPEP experts address parents and teachers in one-day seminars to support them to help young people to use and benefit from the information and tools available at its interactive guidance web portal. EOPPEP provides seminars aiming at the scientific support and training of guidance practitioners in Greece and on the use of Teens gate and its features.

Future developments and trends

Changing trends in information searching processes, browsing behaviour and content consumption preferences, in the popularity of different digital communication channels or in the size of available internet devices, may influence Teens gate.

EOPPEP plans to launch an online chat function to resonate better with its young users. Other developments include additional vocational orientation tests and a more elaborate study on the impact of its tools.

2.2.2. **Anelo.lu: Luxembourg**

https://www.anelo.lu

Brief presentation of Anelo.lu

- geographic level: national
- founding year: 2012
- type of initiative: public
- is the initiative a single access point? Yes
- target groups: students; unemployed; employed; guidance counsellors; teachers; professors
- providing organisation: Maison d'Orientation (National Guidance Centre Luxembourg)
- stakeholders involved and their role: government; businesses; civil society. The governmental organisations SNJ, ADEM-OP, CPOS, CEDIES: schools, teachers, youth workers serve as multipliers of the platform. The business community is an informal stakeholder, as testimonial videos are recorded at their premises.

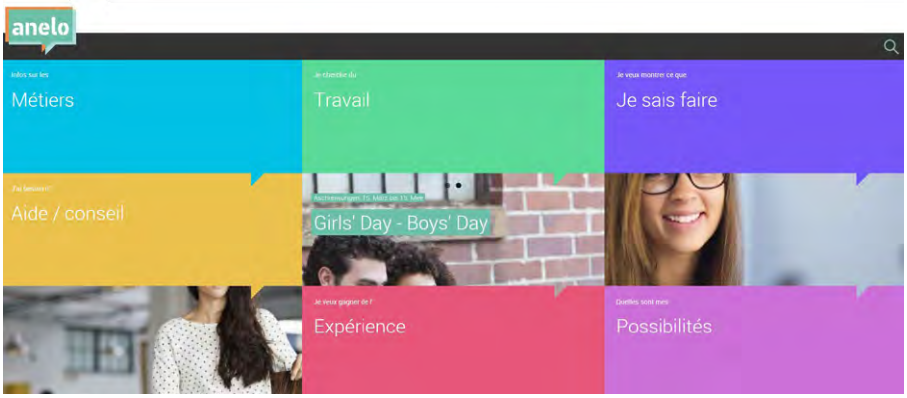
Challenges addressed

- Improve matching between skills and jobs
- Promote self-assessment
- Aid transition from school education to career selection
- Improve guidance/employment services
- Raise guidance awareness

Anelo.lu is a one-stop-shop serving as a comprehensive online source for teenagers and young adults, facing the transition from school education into occupation education and the world of work. It consists of:

- beruffer.anelo.lu: extensive database of different professions and job profiles;
- eportfolio.anelo.lu: for uploading all documents relevant to job search;
- certificate.anelo.lu: for uploading certificates obtained;
- self-assessment.anelo.lu: for discovering individual interests and strong characteristics, which might be helpful for the transition from school to work;

- entretien.anelo.lu: relevant information on job interviews;
- jobcity.anelo.lu: online game, where different jobs are presented and people can discover their interests and strong characteristics.



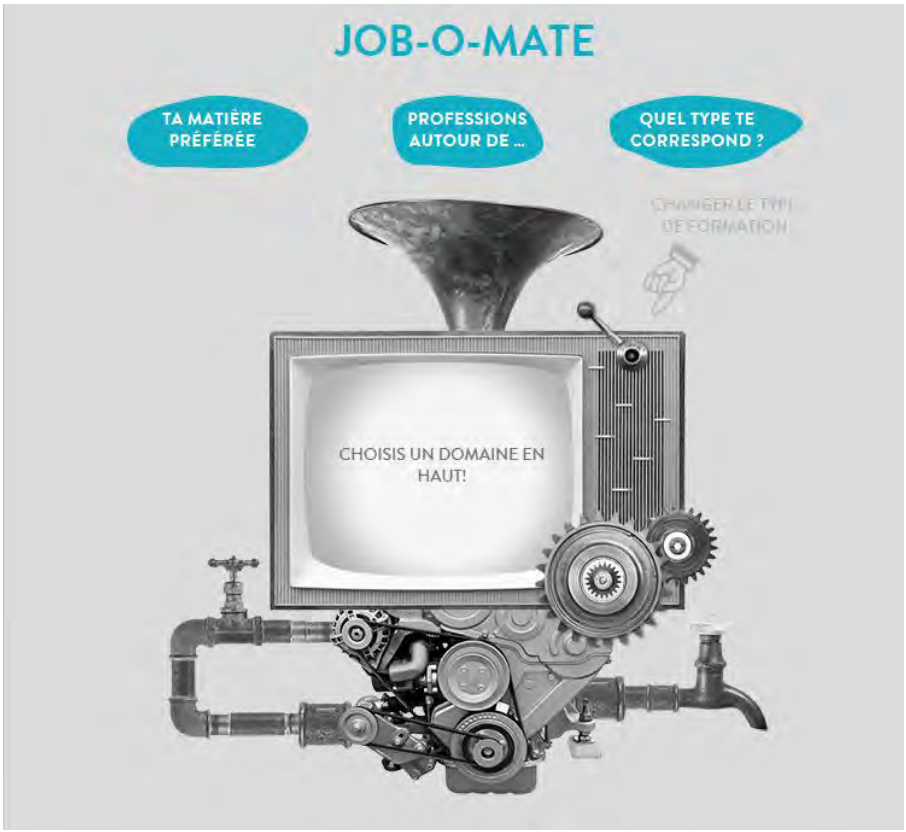
Policy objectives

- career management skills
- access to lifelong guidance services
- improving careers information
- guidance practitioner training and qualifications
- ICT in lifelong guidance;
- raising the skills and qualifications of young people

What is the role of LMI and how is it used in Anelo.lu?

- **Occupation information**
- **Innovative user profiling**
- **Blended counselling**

- The tool beruffer.anelo.lu has a large amount of LMI as it provides descriptions of a large set of professions.
- Three different organisations are responsible for the collection of up-to-date information of different jobs and education requirements.
- Anelo.lu also provides a general link to the public employment service ADEM with a large amount of LMI.

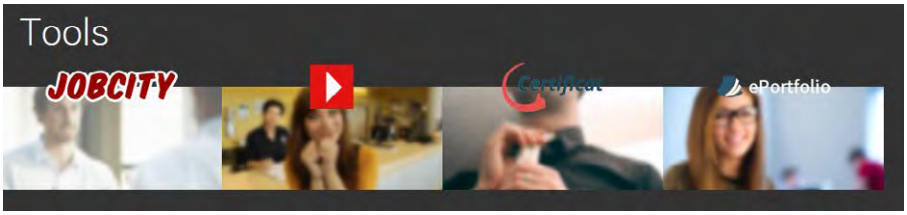


What role does ICT play in Anelo.lu?

- **Personalised information storage**
- **Interactive online tools**
- **Online counselling**
- **Online wiki**
- **Open source**
- **e-portfolio**

- It serves as a comprehensive online resource.
- Support is provided in terms of both, textual online content and multimedia content.
- An extensive occupation video database is featured.

- Self-assessment of personal interests and skills, including so called soft skills, is aided by a dedicated online tool.
- A further tool supports the user in preparing, conducting and following up job interviews; gamification elements are included in terms of a dedicated online game.
- After registration, a further tool supports the user in organising certificates already received.
- The e-portfolio can be used for developing and maintaining a personal online portfolio, including official documents and other documentations of personal strengths and capabilities.



What results and impacts have been achieved by Anelo.lu?

Quantitative results: In 2015 visits amounted to around 74 568, most being for Anelo.lu (32 155 visitors), and Berufer (31 711).

Qualitative results: There are no qualitative evaluation results for Anelo.lu, as no official evaluations have been performed to assess the impact of the services on career choices, career skills or the empowerment of users. There is only anecdotal evidence on the impact of Anelo.lu on career choices and career skills, according to the experience of career counsellors and youth workers, who consider that the platform succeeds quite well in achieving these goals.

Evaluation process: The different tools are presented to a small group of potential users for evaluation prior to launch.

Success factors

- motivation of stakeholders to keep the platform up to date and reliable
- one-stop-shop for young people in search of information and tools provision to upgrade their skills
- user friendliness and appealing layout

Points of attention

- qualitative continuous updating
- practical barriers with accounts, for example difficulties remembering personal password and settings
- due to rapid technological change, some tools are not available on all processors or internet browsers

TRANSFERABILITY ELEMENTS

Socioeconomic/-political context

- lack of a one-stop-shop with job information
- financial crisis in 2008, which led to a substantial increase in jobless young people that induced the call for improved guidance services

Financial requirements

Anelo.lu is developed partly by funding of the European Social Fund (50%) and partly with public money (50%).

Human resources requirements

Each department is responsible for maintenance and keeping information up to date in its own work area on Anelo.lu;

As policy and school reforms have implications for the information provided on Anelo.lu, continuous updating is necessary to keep the platform reliable and up to date. Updating the information remains the responsibility of each organisation.

ICT elements

- Anelo.lu is a stand-alone website containing links to the different its tools.
- These different platforms are secured as they are only accessible by a unique personal password combined with an email address.
- Specific software is developed by external specialised companies, in cooperation with graphic design firms.

Non-ICT elements

No specific non-ICT elements are needed for using Anelo.lu.

Future developments and trends

- There are no changes planned for the current platform.
- As young individuals are increasingly connected through applications, it would be possible to think about an application in which Anelo.lu and its different tools are offered.
- Other tools might be introduced, for example on international mobility of workers.

2.2.3. **Professions in the picture: the Netherlands**

https://www.beroepeninbeeld.nl

Brief presentation of Professions in the picture

- geographic level: regional; national
- founding year: 2010
- type of initiative: public
- is the initiative a single access point? No
- target groups: youngsters (14 to 21); pupils; school dropouts; teachers, school guides
- providing organisation: Cooperation Organisation for Vocational Education, Training and the Labour Market (SBB)
- stakeholders involved and their role: businesses; academia.
  National business associations, trade unions and federations, with vocational institutions and training agencies, provide and validate the labour market information offered within the website, in consultation with SBB.

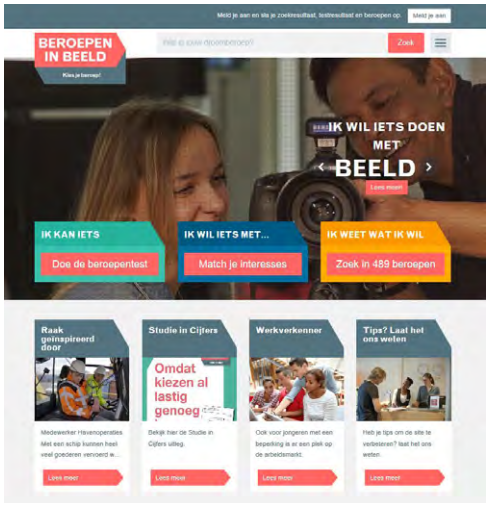
Challenges addressed

- Improve matching between skills and jobs
- Promote self-assessment
- Aid transition from school education to career selection
- Improve guidance/employment services
- Knowledge exchange (among education professionals, guidance counsellors, etc.)
- Raise guidance awareness
- Tackle unemployment

Professions in the picture provides students with updated information on the labour market and on professions in the Netherlands.

More than 480 professions are presented with descriptions, texts and videos; there is information about training, internships and job opportunities for each occupation.

The website is linked with two pages supporting the transition from school to training.



Policy objectives

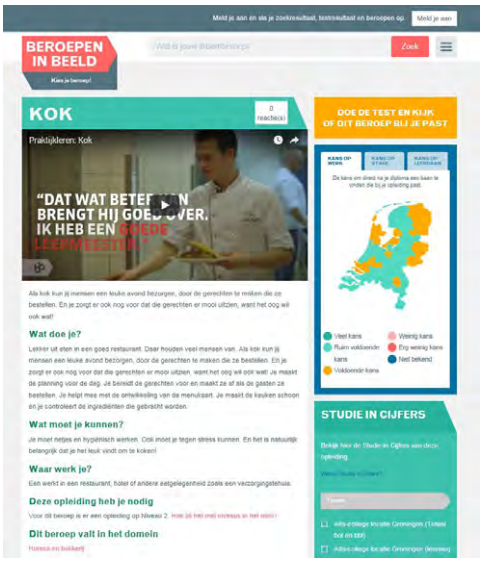
- career management skills
- access to lifelong guidance services
- assuring the quality of lifelong guidance provision
- improving careers information
- guidance practitioner training and qualifications funding lifelong guidance services
- ICT in lifelong guidance
- raising the skills and qualifications of young people
- raising the skills and qualifications of adults
- supporting people at risk and disadvantaged groups

What is the role of LMI and how is it used in Professions in the picture?

- Real-time LMI
- Effective job matching
- Personalised education advice
- Innovative user profiling
- Occupation information
- Interoperability with job-search engines

Types of labour market information provided involve:

- information on professions and required education level, or link to the 'MBO City' website (list of schools offering training for a particular profession);
- tests of profession suitability for the user;
- map of job and internship opportunities across the Netherlands.



The main providers of labour market information are research institutes, the Central Bureau of Statistics (CBS), UWV and SBB. SBB has also created an extra website especially for teachers with lesson material, assignments and links.

What role does ICT play in Professions in the picture?

- **Interactive online tools**
- **Online wiki**
- **Connection with third parties (LMI, PES, etc.)**
- **Social media utilisation**

- SBB has a contract with an external ICT company that hosts and maintains the website.
- The update and quality assurance of data is secured by agreements made with the data suppliers.
- Users can share information on Facebook and Twitter.

- Within the framework of the project 'Boris helps you into work', a project that focuses on employing young people with special needs, there is also lesson material and assignments for VSO ([3]) and practice education.

What results and impacts have been achieved by Professions in the picture?

Quantitative results: during the first quarter of 2015, 127 000 unique visitors visited the sites; 25% are repeat visitors.

Qualitative results: There is no information available on qualitative outcomes, such as the impact on career choices or skills of the website-users, as the site is not monitoring such developments.

Evaluation process: SBB gets feedback mostly from study advisers and teachers, who express their opinion on the use of the website by either contacting SBB directly via email or sharing their views in SBB events. Students can provide feedback also via their 'contact button'.

1. Rating for student satisfaction.
2. Percentage of students that passed their final exams and obtained a diploma.
3. Transfer to higher professional education.
4. Possibility of work in the profession that you are trained for.
5. Availability (chance) of work placement for this study programme.
6. Starting salary per hour.

([3]) *Voortgezet speciaal onderwijs* [voluntary special education], continuing special education for students with disabilities in small classes and with specialised teachers.

Success factors

- reliable, qualitative, up-to-date and independent information
- LMI sources are validated
- national and regional information offered is accurate, detailed, mostly with a forward-thinking perspective
- extra safety for the quality of the information, thanks to the validity of SBB
- close cooperation with user groups
- separate lesson material for teachers who teach young people with special needs
- relatively low budget

Points of attention

- different methodology to provide information for each of the 17 centres of expertise
- difficulty in the interaction with the users of the website
- occupation videos on the website are old-fashioned and do not appeal to today's students
- results of matching tests are sometimes unclear or may include contradictory statements
- need for more information on application issues and for the creation of a central website

TRANSFERABILITY ELEMENTS

Socioeconomic/-political context

In 2010, SBB started within a project to create job descriptions, to identify and categorise skills, competences and occupations in a more standardised way, in accordance with the ESCO classification. This led to the creation of a new website by the Dutch Ministry of Education aiming at embedding the results in a digital platform and making them available to students.

Financial requirements

The website was developed and funded as part of a project, with additional funding coming from SBB. The budget for 2016-17 came from LOB ([4]) subsidy (EUR 50 000) and from SBB (EUR 50 000).

([4]) *Loopbaanonderwijs* [careers education].

Since 2015, the budget has been reduced to 50%, as the website is now fully developed.

Human resources requirements

Two employees of SBB are managing the project and have a background in sociology, statistics and information technology. They need to demonstrate coordination, translation and analytical skills; they also need good writing skills, able to focus on the important information and summarise it. They need to have a good knowledge of the Dutch education system, and of developments in the Dutch labour market.

ICT elements

- The content of the site is public and accessible worldwide.
- IT has an independent character and features no advertisements.
- Most of the material dedicated to teachers is downloadable in PDF form.
- Teachers are free to use whatever suits them best.

Non-ICT elements

Stakeholders from the education and business sector are part of the general management and/or the executive committee of SBB. SBB is constantly looking for ways to satisfy both employers and schools.

Future developments and trends

- new services will be gradually introduced; a mix of online services and personal contact;
- positioning products and services
- strengthening cooperation between education and business at national, sectoral and regional levels
- creating a new website involving parents, students and teachers.

2.2.4. **Education info: Sweden**

http://www.utbildningsinfo.se

Sök bland alla utbildningar i alla skolor
Utbildningsinfo

Brief presentation of Education info

- geographic level: national
- founding year: n.a.
- type of initiative: public
- is the initiative a single access point? Yes
- target groups: school students; higher education; adult education; college students; unemployed; employed looking for a career change; guidance counsellors; parents; immigrants
- providing organisation: Swedish National Agency for Education
- stakeholders involved and their role: government; academia; students; parents; immigrants; career guidance practitioners; Statistics Sweden

Municipalities offer information on the education system, while the Swedish public employment service is responsible for the provision of LMI data about occupational profiles and forecasts. Statistics Sweden provides education and labour market data.

Challenges addressed

- Promote self-assessment
- Aid transition from school education to career selection
- Improve guidance/employment services
- Knowledge exchange (among education professionals, guidance counsellors, etc.)
- Raise guidance awareness
- Tackle unemployment

Education info mainly aims to empower students to make informed decisions on their transition from one education level to another, while also having in mind the career prospects of their choices.
Education info can be used either independently by the students or with the assistance of an education guidance practitioner.

Practitioners use the website during their guidance sessions and working hours at schools or through career guidance counselling outside the school environment.

Policy objectives

- career management skills
- access to lifelong guidance services
- assuring the quality of lifelong guidance provision
- improving careers information
- ICT in lifelong guidance
- raising the skills and qualifications of adults
- raising the skills and qualifications of young people
- improving employability and supporting older workers
- supporting people at risk and disadvantaged groups

What is the role of LMI and how is it used in Education info?

- Personalised education advice
- Blended counselling
- Occupation information

LMI provided involves information about what students should consider when making a transition between education levels or a transition to working life:

- learning opportunities provided by the education agencies of the country, such as information on the entire school system, the different education levels in Sweden, and statistics that enable comparisons between schools;
- LMI, provided by the Swedish public employment service, such as information about different professions and their links with higher education and with pre-university national programmes; occupation profiles linked to national vocational programmes; labour market forecasts.

LMI is presented through different delivery means such as videos, graphs, pictures, voice and text.

What role does ICT play in Education info?

- Combination with offline elements
- Online wiki
- Personalised information storage
- Social media utilisation
- Online counselling

Data from different sources is collected in a standardised manner, based on the EMIL national standard.

Susa Hub is the central hub/database in the EMIL ecosystem that collects information about education opportunities and education providers from multiple sources. The various partners provide their data in an XML format. These XML files, along with data collected internally, is entered in the Susa Hub. Education info.se gets these files from Susa Hub via http, processes it and stores it in a Solr database. Data is being updated daily, while compulsory and upper secondary information is drawn from an in-house database.

The website also fetches information on the labour market (forecasts and occupation descriptions) from an internal system using an Oracle service bus.

Another important technical element of the practice is the open data policy that is being followed for data and information included.

What results and impacts have been achieved by Education info?

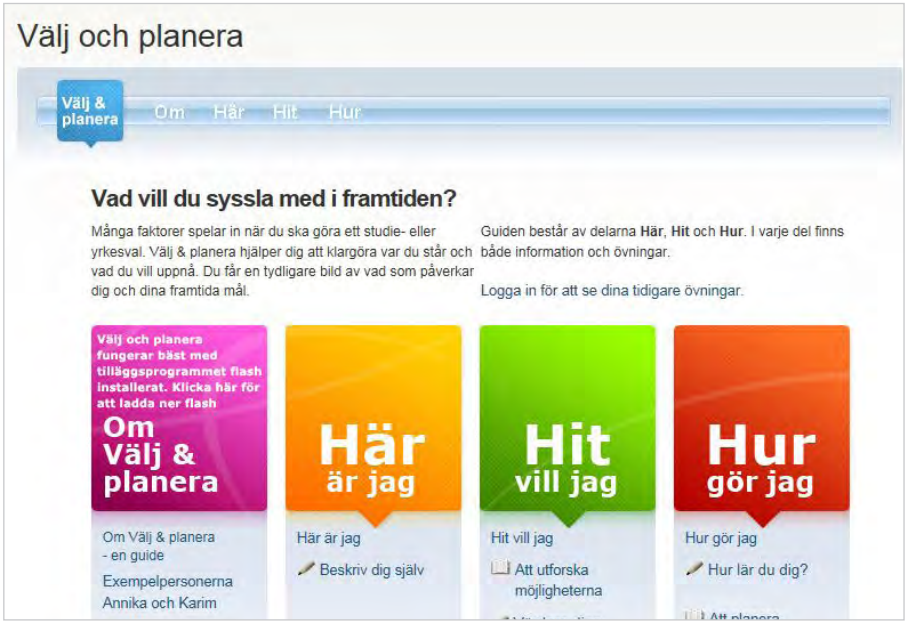
Quantitative results: During October 2015 to October 2016, the site attracted almost 1 450 000 visitors.

Qualitative outcomes: The website presents a full spectrum of education opportunities, which greatly supports students and can result to a better matching between education skills needed by the labour market. The platform actively supports the work of guidance practitioners. The operation of the website as a single access point of LMI on education opportunities for students has positive implications to the entire national lifelong guidance system.

Evaluation process:

(a) evaluation by users and practitioners, via dedicated email address,

(b) the agency contacts education guidance providers either through email or on a larger scale by posting a request on the Facebook account of Swedish guidance practitioners.



Success factors

- Many different stakeholders in the Swedish education system have agreed to collaborate with the Swedish National Agency for Education and offer their data.
- LMI on education opportunities is offered in a standardised and uniform way by following a specific national standard.
- The website offers education guidance, while taking into account career prospects.
- The website is built on a guidance framework that uses content management system development as a bottom line.
- Excellent communication with guidance practitioners.
- Much of the content is provided in 18 languages.
- The website has a good level of user-friendliness and provides different means of delivering LMI.
- Government support and the fact that the government commissioned it.
- ICT in education and guidance is promoted through the overall national context.

Points of attention

- Guidance practitioners were resistant to change, fearing replacement of their role.
- The website is not actively promoted.
- Strong competition from private guidance practices and competing sites.
- Information might have to be simplified.
- The content management system of the platform did not aid easy integration of other websites or the translation of texts in many languages.

TRANSFERABILITY ELEMENTS

Socioeconomic/-political context

- The practice has high compatibility with the structure of the Swedish lifelong guidance system and enjoys political endorsement since its initial development was mandated by the Swedish government.
- Involving many education institutions and guidance authorities in its implementation demonstrates its integration in the lifelong guidance system of Sweden.
- The use of the website within the school practices is promoted by the national authority responsible for this level of education.

Financial requirements

The annual budget for the operation and maintenance of the practice is EUR 100 000. The overall budget for the initial development of the website was EUR 1 million, including costs for external consultants, infrastructure, software and personnel.

Human resources requirements

Three people are involved – part time – with the everyday operation and maintenance of the website; they have ICT backgrounds and have extensive experience of education issues. The legal department and education experts validating the texts presented on the website also contribute. Around 1 900 people are employed as guidance counsellors in the Swedish school system; they are hired directly by the schools or centrally by each municipality. Practitioners follow a three-year university programme that leads to a bachelor of education in career counselling.

ICT elements

- The technical infrastructure is limited to simple requirements of a website: a front and back end server; a database; a machine for extra services.
- The technical part for developing the specific applications is also quite simple.
- The structure of the website is simple, based on the Polopoly content management system.
- The user-friendliness of the website is quite high.

Non-ICT elements

The LMI and the website exercises can be used either individually or with the help of a school counsellor. Even though the use of the tools in both cases remains online, in the latter case it is combined with physical delivery methods within the school environment.

Many education system stakeholders collaborate and offer data on a voluntary cooperation basis; this is important for the provision of an up-to-date and reliable overview.

Future developments and trends

- migration of the various web platforms of the Swedish National Agency for Education into one
- a new version of the platform's database containing an API that will support cooperation with external authorities is being tested
- marketing efforts must be improved to raise awareness among students and schools
- need for greater involvement of schools in terms of providing them training on how to use the website
- need for actions towards the tool adoption within the municipalities' guidance practices
- need for more systematic mechanisms to support the incorporation of practitioner feedback into the development of LMI
- more resources required for the website to aid better planning of future developments

2.2.5. **eGuidance service: Denmark**

https://www.ug.dk/evejledning

UddannelsesGuiden

Brief presentation of the eGuidance service

- geographic level: national
- founding year: 2011
- type of initiative: public
- is the initiative a single access point? No
- target groups: pupils students; adults; parents; guidance practitioners; teachers; Job Centre employees
- providing organisation: National Agency for IT and Learning
- stakeholders involved and their role: parents; teachers; guidance practitioners public agencies and education institutions.

The eGuidance service engages with parents; cooperates with teachers; counsellors share knowledge with practitioners. Reliable LMI provided from public agencies in Denmark.

Challenges addressed

- Improve matching between skills and jobs
- Promote self-assessment
- Raise guidance awareness
- Improve guidance/employment services
- Knowledge exchange (among education professionals, guidance counsellors, etc.)
- Aid transition from school education to career selection

The eGuidance service is a key online resource for LMI providing up-to-date and comprehensive information on education in Denmark and guidance tools empowering citizens to find answers about education and jobs. It complements and improves the performance of the Danish guidance system by providing reliable, up-to-date information and supporting the education and occupation decisions of citizens through a broad range of digital means across the country.

Policy objectives

- career management skills
- access to lifelong guidance services
- assuring the quality of lifelong guidance provision
- assessing the effectiveness of lifelong guidance provision
- strategic leadership
- improving careers information
- guidance practitioner training and qualifications
- funding lifelong guidance services
- ICT in lifelong guidance
- raising the skills and qualifications of young people
- raising the skills and qualifications of adults
- improving employability and supporting older workers
- supporting people at risk and disadvantaged groups

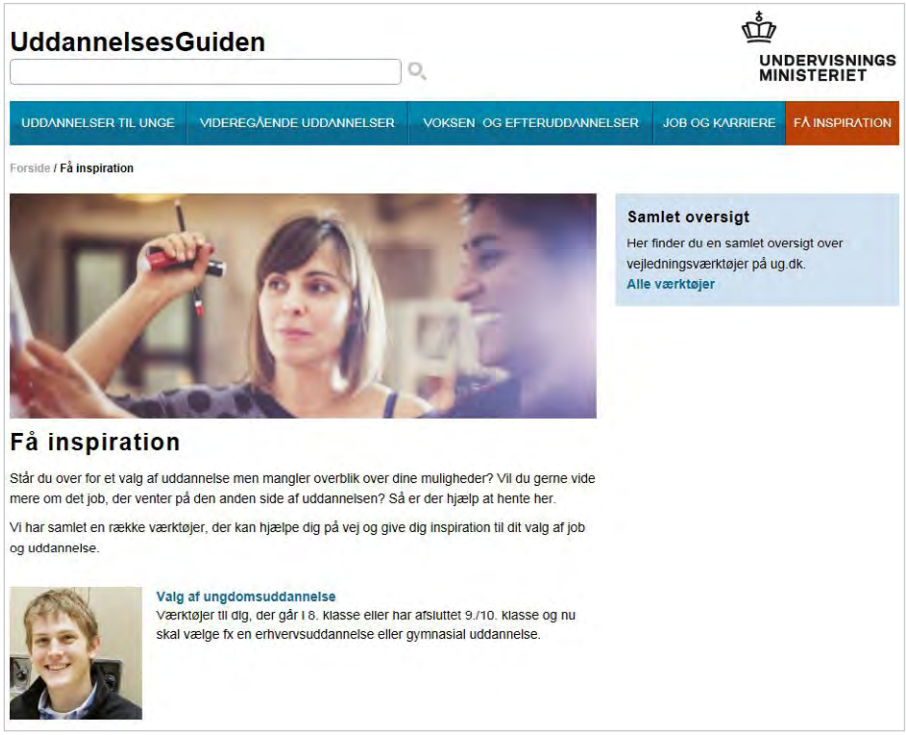
What is the role of LMI and how is it used in the eGuidance service?

- Real-time LMI
- Personalised education advice
- Blended counselling
- Occupation information
- Interoperability with job-search engines

LMI is a core element and is used in a variety of manners:

- providing information on education and training opportunities across Denmark, as well as guidance on how to select an appropriate education path;
- providing information on jobs, careers and available employment opportunities across Denmark. One option is JobCity, which is a virtually animated city where users can wander around and find out how education and training may be applied in different jobs and workplaces;
- providing guidance on how to apply for jobs;
- 'My competence portfolio' helps users to create a comprehensive overview of what they have learned and the competences they have acquired through their jobs.

The provision of LMI and guidance is based on a tailored guidance model, the C-model which was designed to fit the digital context of the service.



What role does ICT play in the eGuidance service?

- **Interactive online tools**
- **Connection with third parties (LMI, PES, etc.)**
- **Personalised information storage**
- **Social media utilisation**
- **Online counselling**
- **Open source**
- **e-portfolio**

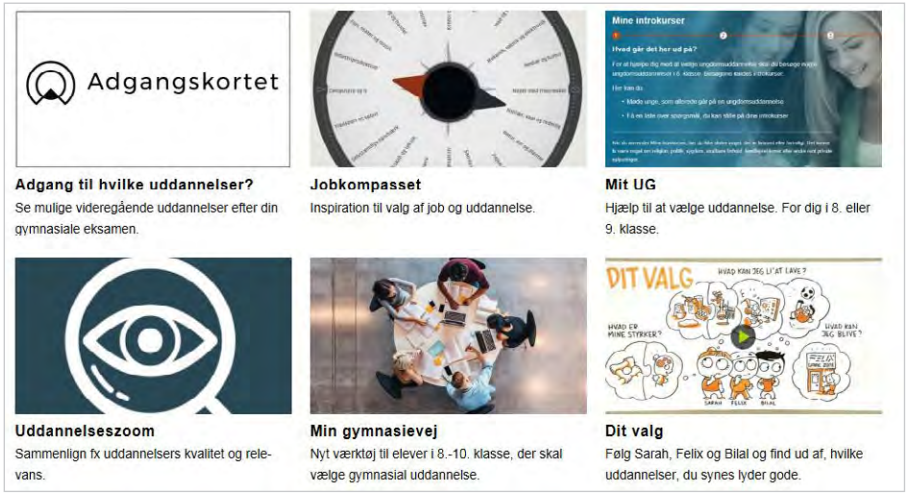
- uses a cloud-based multi-channel contact centre provided by Intelecom in the form of Software as a Service
- call-centre to support information and guidance services over the telephone
- web conferencing tool is employed
- the service may be accessed online through the Education guide, which was developed using HTML5 in Drupal, an open source platform
- the Education guide was developed in accordance with the widely recognised WCAG 2.0
- a representative selection of its different web pages is thoroughly tested by professionals

What results and impacts have been achieved by the eGuidance service?

Quantitative results: Users have grown to more than 110 000 in 2015.

Qualitative outcomes: The interviews conducted during the fieldwork in Denmark suggest that the development and growing adoption of the eGuidance service appears to be creating a significant positive impact on the national lifelong guidance system as well as its stakeholders.

Evaluation process: Follow-up survey, addressing users after the end of their digital guidance session. Asynchronous communication channel for users and stakeholders through the dedicated service contact point. Interactions with other guidance practitioners and counselees in conferences. Feedback from users during their sessions. Annual satisfaction survey on the portal. Focus groups and discussions with representatives of stakeholders.



Success factors

- long opening hours during the week
- broad array of digital channels to communicate and provide citizens with guidance
- use of a science-fuelled guidance model and toolkit
- well-qualified and highly skilled personnel
- synergies of practitioners with stakeholders
- openness to discuss with and collect feedback from users and stakeholders
- presence of the national web portal dedicated to education and career information (Education guide), which serves as a key source for LMI
- Denmark high digital literacy

Points of attention

- scepticism with respect to digital guidance
- lack of physical contact in digital guidance sessions
- different digital delivery methods

TRANSFERABILITY ELEMENTS

Socioeconomic/-political context

The service is delivered within the framework set out by the Danish Act on Guidance, supporting the strategic goals and policies of the national government.

Financial requirements

The annual budget of the eGuidance service reaches about EUR 4 384 404 per year plus an ad hoc amount of financial resources allocated for development of its operation.

Human resources requirements

60 people work under the Division of Digital Guidance and Support; they are led by the Head of Division who is supported by team coordinators who help to manage the different activity streams in the framework of the division. 40 practitioners are tasked with the implementation of the practice, serving as counsellors and editors of the Education guide.

The division has 25 full-time and 15 part-time practitioners, who must have significant competences in guidance and digital literacy, with good overall knowledge of the national education system. They must also have completed an appropriate education/training programme at diploma level in guidance or be able to evidence their qualifications via assessment and recognition of prior learning. On-the-job training is provided to new practitioners following completion of their tailored training.

ICT elements

- simple technological infrastructure
- appropriate software supporting different guidance delivery methods
- call-centre and laptop computers
- user-friendly interface software so counsellors can easily manage the different digital communication channels from their laptop computers

Non-ICT elements

Telephone contact is used for individual guidance and is typically the preferred delivery method for those seeking an immediate response from a counsellor or a quick answer to a specific question.

Stakeholder engagement is strategically integrated with a view to promoting service acceptance among users and stakeholders alike and collecting meaningful feedback for the service to improve and evolve in alignment with their needs.

Future developments and trends

- fast pace of ICT change in how people communicate and behave
- growing interest in public chat

2.2.6. **Pathfinder service: Estonia**

https://rajaleidja.innove.ee

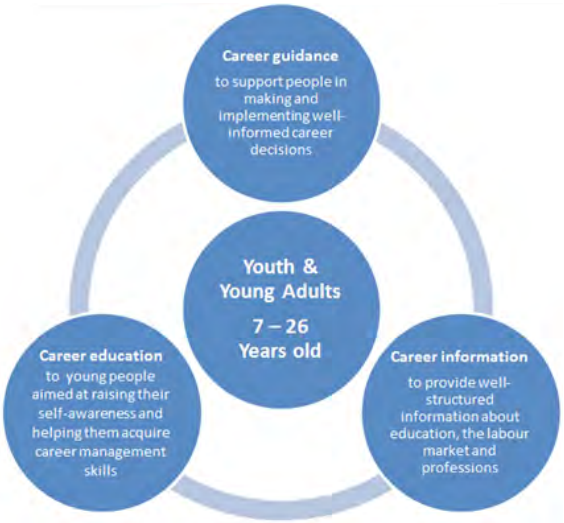
Brief presentation of the pathfinder service

- geographic level: regional
- founding year: 2001
- type of initiative: public
- is the initiative a single access point? No
- target groups: students in secondary schools; students in vocational education institutions; young adults; early school leavers; practitioners; teachers and career coordinators
- providing organisation: Foundation Innove, Agency for Lifelong Guidance
- stakeholders involved and their role: parents; teachers and career coordinators; public authorities and institutions; businesses.
  Parents, teachers, career coordinators are key target groups, cooperating with practitioners; public authorities, institutions are the LMI principal sources. Companies, professional associations, individual professionals contribute to LMI production.

Challenges addressed

- Improve matching between skills and jobs
- Promote self-assessment
- Aid transition from school education to career selection
- Improve guidance/employment services
- Knowledge exchange (among education professionals, guidance counsellors, etc.)
- Raise guidance awareness
- Tackle unemployment

Main target group and career services of Pathfinder



Pathfinder serves as a unique LMI resource, integrated and utilised in the context of the practice. Via its simple, user-friendly and creative interface, users and professionals can access the LMI openly available across its four main sections, which are dedicated to:

- youth;
- adults;
- the Pathfinder game;
- practitioners, teachers, career coordinators.

The portal also offers users the opportunity to search for, identify, contact and/or schedule an appointment with a Pathfinder practitioner close to them to receive further support.

Policy objectives

- career management skills
- access to lifelong guidance services
- assuring the quality of lifelong guidance provision
- assessing the effectiveness of lifelong guidance provision
- strategic leadership
- improving careers information
- guidance training and qualifications
- practitioners
- funding lifelong guidance services
- ICT in lifelong guidance
- raising the skills and qualifications of young people
- raising the skills and qualifications of adults
- improving employability and supporting older workers
- supporting people at risk and disadvantaged groups

What is the role of LMI and how is it used in the Pathfinder service?

- Real-time LMI
- Personalised education advice
- Blended counselling
- Occupation information

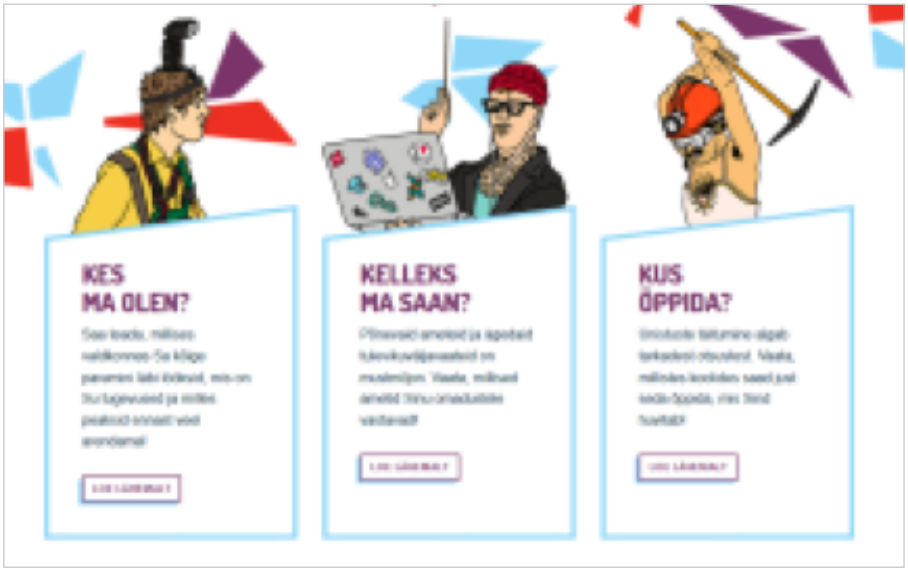
What role does ICT play in the Pathfinder Service?

- Interactive online tools
- Online wiki
- Online counselling
- Open source

The platform on which the Pathfinder career planning portal is implemented uses the Saurus content management system as well as the Zend framework.

The basic technological infrastructure includes mid-size 'rackable' servers as well as a central data storage, upon which a VMware Hypervisor runs and enables the content management system of the platform to be seamlessly and constantly operational.

Information security is safeguarded via a dedicated framework 'Three-level IT baseline security system', ensuring that data availability, integrity and confidentiality are kept at a high level.



What results and impacts have been achieved by the Pathfinder service?

Quantitative results:
288 956 unique users of the portal in 2016, corresponding to almost 22% of the Estonian population.

Quantitative outcomes:
Pathfinder contributes to:

- empowering users to develop career management skills;
- breaking down stereotypes of gender and age and promoting equal opportunities for career guidance in Estonia;
- enhancing the capacity of practitioners to support better their target groups;

- reducing early school leaver rates within the Estonian education system;
- fostering closer cooperation among guidance professionals and stakeholders.

Evaluation process:

- Follow-up survey addressing users shortly after their experience with Pathfinder services;
- Users, practitioners and stakeholders provide feedback through the dedicated contact point available at the portal;
- The agency conducts surveys on a larger scale every few years.

Success factors

- reliable and up-to-date LMI delivered for free, addressing the diverse needs of its target groups
- focus on developing content management systems
- regional yet centrally-coordinated approach
- combination of face-to-face and digital career guidance and information services
- emphasis on ensuring the qualifications of Pathfinder practitioners and on continuously enhancing their knowledge and skills
- trustworthy brand in the national lifelong guidance system
- collaboration among guidance stakeholders at regional and national level
- international cooperation

Points of attention

- scattered and complex LMI
- lack of awareness of the Pathfinder services
- limited national financial resources

TRANSFERABILITY ELEMENTS

Socioeconomic/-political context

Pathfinder is used by the national government as a key means of achieving its long-term goals and plays a pivotal role in the national lifelong guidance system. The practice is well-aligned with national and EU policy guidelines, contributing to reforming and improving the national guidance system of Estonia.

Financial requirements

Part funded by the EU and the Estonian government: EUR 30 348 were allocated to technical development of the portal between 2012 and 2016, plus EUR 4 200 for annual technical maintenance. Other cost categories include personnel, content development, etc.

Human resources requirements

230 professionals are involved in delivering the service.

Pathfinder practitioners are qualified with at least a bachelor degree in a relevant field and their qualifications have to comply with the respective occupational qualification standards. They are further trained through continuing training activities, aiming at safeguarding the quality of their services.

ICT elements

Pathfinder utilises the Saurus content management system and the Zend framework.

Pathfinder practitioners were offered a dedicated international training course in 2016 on the role of ICT in lifelong guidance.

Non-ICT elements

Users have the opportunity to search for, identify, contact and/or schedule an appointment with a Pathfinder practitioner close to them to access quality and more personalised support.

Parents are vital allies, while teachers and career coordinators play a leading role in the integration of career guidance within the Estonian education system. Data and information published by public authorities and institutions serve as the principal source of LMI, while businesses also contribute.

Future developments and trends

- major renovation of the web portal to introduce layout improvements, LMI presentation and self-help tools available online
- novel digital guidance delivery method through an online chat function, enabling users to contact suitable Pathfinder practitioners directly
- communication and information acquisition and advances in guidance at national and international level
- participation of the agency in several initiatives, in the context of international cooperation

2.2.7. **Online tools of BiWi: Austria**

https://www.wko.at/site/Biwi/BiWi-Berufsinformationszentrum-der-Wiener-Wirtschaft.html

Berufsinformationszentrum der Wiener Wirtschaft

Brief presentation of the online tools of BiWi

- geographic level: regional
- founding year: 1991
- type of initiative: public
- is the initiative a single access point? No
- target groups: school students (13 to 18); higher education; college students; unemployed; employed looking for a career change; immigrants
- providing organisation: Verein für Vernetzung, Forschung und Wissenstsransfer zur Förderung gesellschaftlicher Teilhabe
- stakeholders involved and their role: government; businesses; academia, civil society; parents.
  Stakeholders have a crucial role in the operation of the initiative.

Challenges addressed

- Improve matching between skills and jobs
- Promote self-assessment
- Aid transition from school education to career selection
- Improve guidance/employment services
- Tackle unemployment

Services offered to young people:

- career guidance information;
- personal discussion on career information;
- application training;
- orientation checks;
- occupation tasting;
- career guidance brochures.

Services to companies: support for apprentice selection and image building of professions and industries.

BiWi supports teachers by: industry presentations and class visits to the premises of BiWi.

For parents and guardians, BiWi organises dedicated parents' evenings.

Policy objectives

- career management skills
- access to lifelong guidance services
- assuring the quality of lifelong guidance provision
- improving careers information
- guidance practitioners training and qualifications
- ICT in lifelong guidance
- raising the skills and qualifications of young people
- raising the skills and qualifications of adults

What is the role of LMI and how is it used in the online tools of BiWi?

- Real-time LMI
- Personalised education advice
- Blended counselling
- Occupation information

The LMI integrated in the online tools of BiWi includes:

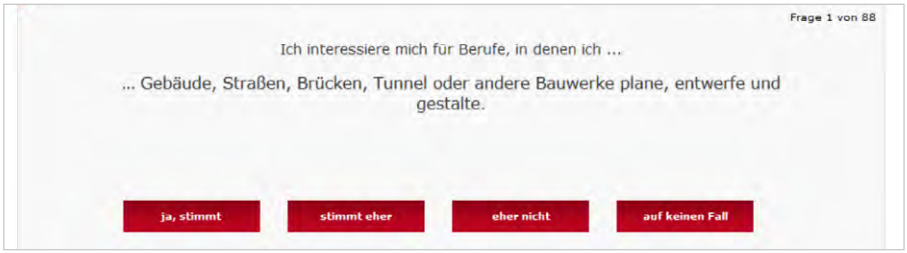
- information on examples of professions and companies, labour market statistics and trends;
- information on occupations, through films with professionals describing their daily routine;
- essential information for job applications with CV examples and tips for interviews;
- information on available apprenticeship positions;
- information on the Austrian education system and establishments involved.

What role does ICT play in the online tools of BiWi?

- Combination with offline elements
- Interactive online tools
- Personalised information storage (image building of professions and industries)
- Online counselling

Three external ICT companies support the technical work of BiWi and maintain its web pages. BiWi employees have editorial rights only for the content of their in-house website.

Inside the BiWi premises visitors can use 28 computers to access information, which is only available there.

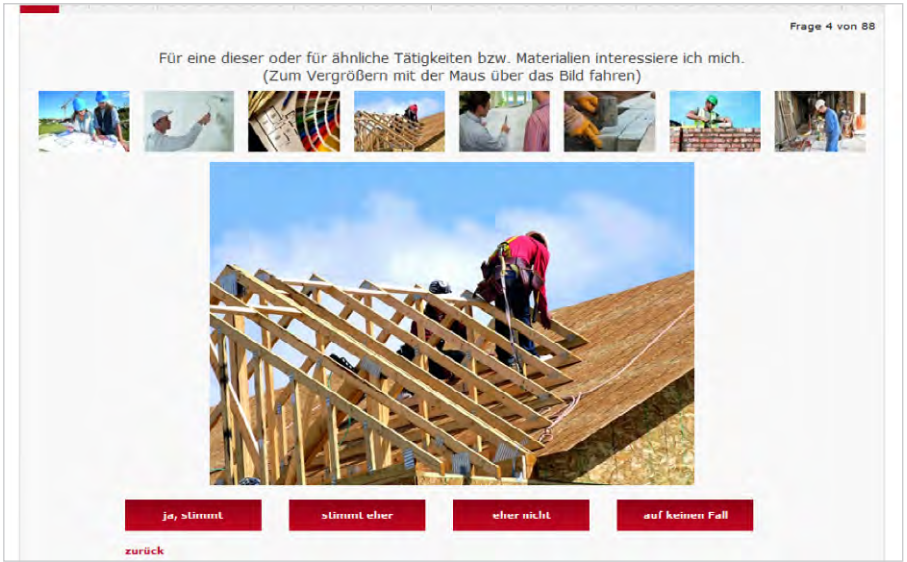


What results and impacts have been achieved by the online tools of BiWi?

Quantitative results: In 2015, more than 10 000 students visited BiWi during class visits; it helped more than 21 863 young people to get a taste of various occupations and workplaces. Additionally, 1 520 parents participated in parents' evenings and 591 teachers participated in conferences.

Qualitative outcomes: Fast response to changing conditions/situations due to agile information gathering/provision by crowdsourcing approach as well as relevance/fit-for-purpose of information/feedback due to bottom-up approach.

Evaluation process: No official process. BiWi is open for feedback and gathers it in an informal way, mainly through discussions with teachers that visit BiWi with their classes.



Success factors

- highly qualified employees with solid scientific background and expertise and open mind-set, as well highly motivated advisers
- word-of-mouth marketing of the BiWi services
- excellent cooperation with the Chamber and political support from the president of the Chamber
- provision of the right offers specialised to the needs of target groups

Points of attention

- lack of properly adjusted material and information for career guidance of older adults
- limited personnel in accordance with the increasing demand for career guidance and information services
- the activities of BiWi are highly dependent on the LMI and material provided by companies
- limited number of industry presentations
- services are restricted to the users in the Vienna province

TRANSFERABILITY ELEMENTS

Socioeconomic/-political context

Developing BiWi is the personal act and idea of a BiWi former director. He initiated the concept of a platform that brings together employers with future labour market candidates.

Although there is no specific policy framework stating the importance of ICT and LMI in frameworks for career training and guidance in Austria, the Annual Plan of the Viennese Economic Chamber for 2017 is a key document pointing out the role of ICT and LMI in the BiWi services in Vienna.

Financial requirements

BiWi is financed through the Viennese Economic Chamber and has a yearly budget of over EUR 500 000. It spends 65% on personnel costs, 10% on ICT and online services and operational and maintenance costs of ICT infrastructures, and the rest on other running costs (rent, marketing, public relations, etc.).

Human resources requirements

BiWi career counsellors have diverse education backgrounds, are well-aware of the Austrian education system and labour market, and have good presentation skills. They are required to have in-depth knowledge of their profession; be team players and open-minded.

ICT elements

No special skills are required for using BiWi services or uploading relevant content. Recently, an automated online tool for booking appointments with classes optimised the process.

Non-ICT elements

The non-ICT elements of the practice include events, dedicated parents' evenings, and parent-teacher conferences.

The Ministry of Education and Women's Affairs and the Institute Research and Development in VET are important partners in the work of BiWi, providing useful material.

Future developments and trends

BiWi's challenge for the next five years, together with its premises renovation, is to modernise its offers to resonate more with the young people.

2.2.8. **Education choice tool (Onderwijskiezer): Belgium**

https://www.onderwijskiezer.be

Onderwijskiezer
Voor jou gemaakt door je CLB!

Brief presentation of Onderwijskiezer

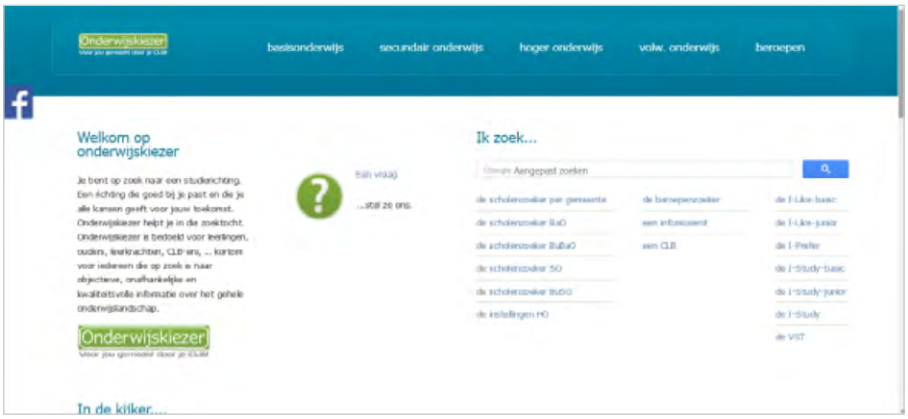
- geographic level: regional
- founding year: 2010
- type of initiative: public
- is the initiative a single access point? Yes
- target groups: school students; higher education; college students; unemployed; employed looking for a career change; guidance counsellors; teachers/professors
- providing organisation: cross-network initiative of the subsidised private centres for pupil guidance (CLB), their umbrella organisation (VCLB) and the centres for pupil guidance of GO! in conjunction with the CPGs of Provincial Education Flanders and the Education Secretariat of Cities and Municipalities of the Flemish Community
- stakeholders involved and their role: government; businesses; academia; civil society; other.
  Different stakeholders are engaged in the financing, development, provision of information (feed) and implementation of Onderwijskiezer

Challenges addressed

- Improve matching between skills and jobs
- Promote self-assessment
- Aid transition from school education to career selection
- Improve guidance/employment services

Onderwijskiezer provides information about primary, secondary and higher education opportunities in Flanders to help people in making an informed study and career choice.

The tool is aimed at students, and their parents, looking for a school, a study programme or a pupil guidance centre. It is also designed for teachers and practitioners involved in student guidance as an information tool and as a tool to be used in their career guidance activities.



Policy objectives

- career management skills
- improving employability and supporting older workers
- access to lifelong guidance services
- assuring the quality of lifelong guidance provision
- improving careers information
- ICT in lifelong guidance
- raising the skills and qualifications of young people
- raising the skills and qualifications of adults

What is the role of LMI and how is it used in Onderwijskiezer?

- Effective job matching
- Blended counselling
- Occupation information
- Interoperability with job-search engines

LMI depicts the link between education options, occupations and labour market opportunities. Four types of LMI are included in the portal:

- education information;
- occupation information: about 900 occupational profiles are included in the tool;
- labour market opportunities, although it does not provide labour market forecasts;
- career development information.

What role does ICT play in Onderwijskiezer?

- **Combination with offline elements**
- **Interactive online tools**
- **Online wiki**
- **Connection with third parties (LMI, PES, etc.)**

- Onderwijskiezer was created as a digital one-stop-shop and online wiki on education options in Flanders.
- Systems ensure comparability of information across schools.
- It is characterised by high connectivity, as it is possible to include information from other databases or sites, or vice versa.
- The website is structured in a user-friendly, simple way, and is accessible free of charge and registration (accessibility).
- Visitors can interact with the team through the permanent questions and answer service.

What results and impacts have been achieved by Onderwijskiezer?

Quantitative results: The portal has been quickly adopted by schools and CLB, students, parents and teachers since its launch in 2011. It received 1.23 million unique visitors between December 2015 and November 2016; 43% were from new visitors.

Qualitative outcomes: Onderwijskiezer contributes to empowering users, to better informed career choices, to improving career practitioner skills.

Evaluation process:

- informal evaluation system, i.e. occasional feedback from schools, teachers, students, parents;
- Google analytics;
- counselling activities by CLB are registered in the LARS database but these data have not been exploited for analytical purposes.

Success factors

- single point of entry for citizens and career professionals
- comprehensive careers and education opportunities database
- the team applies strict criteria to ensure the information impartiality and neutrality
- fast personalised answer to questions, also during school holidays
- use of clear, simple language

- a clear network approach for information retrieval, allowing a relatively small core team to manage a huge amount of information and data
- relatively cheap and simple technology behind the portal

Points of attention

- Career management skills are a voluntary educational attainment leading to significant variety in how the acquisition of career management skills is supported in schools. There is no minimum level that all students should reach.
- There is a general feeling that the wealth of information cannot be fully exploited by the key target public, students and parents, because of its complexity and volume.

TRANSFERABILITY ELEMENTS

Socioeconomic/-political context

The practice Onderwijskiezer was triggered by several practical aspects such as the fragmentation of education information, the occasionally bias in the information, and the opportunity of sharing information with all by creating a website. Onderwijskiezer is an example of a policy initiative integrating ICT and LMI, education and LMI.

Financial requirements

The budget is estimated at EUR 242 000 per year at least.

Human resources requirements

Four full-time employees. All staff members of the team have long experience of working in student guidance, in pupil guidance centres or in projects focusing on developing education career guidance. The person responsible for the technological part of the portal is a CPG staff member with a high level of digital literacy.

ICT elements

The information included in Onderwijskiezer is registered in a SQL database. The collection of information is based on two approaches:

- a network approach for obtaining information from pupil guidance centres and schools. Schools provide information to the local data manager in their CPG who adds the information to the portal;

- information by other partners is added through links. Sometimes, information is added manually. This work will be automated in the future.

The digital skills required to build and to navigate the tool are quite basic but interpreting the information is more difficult, for example the interpretation of study performance rates.

Non-ICT elements

The team of Onderwijskiezer puts a lot of effort into maintaining contacts and reaching out to partners.

Future developments and trends

- A new orientation tool for students making the transition to higher education (Columbus) has recently become available.
- Certain issues could undermine stability in the long term, such as the lack of structural funding.

2.2.9. **CareersPortal.ie: Ireland**

https://careersportal.ie/

Brief presentation of CareersPortal.ie

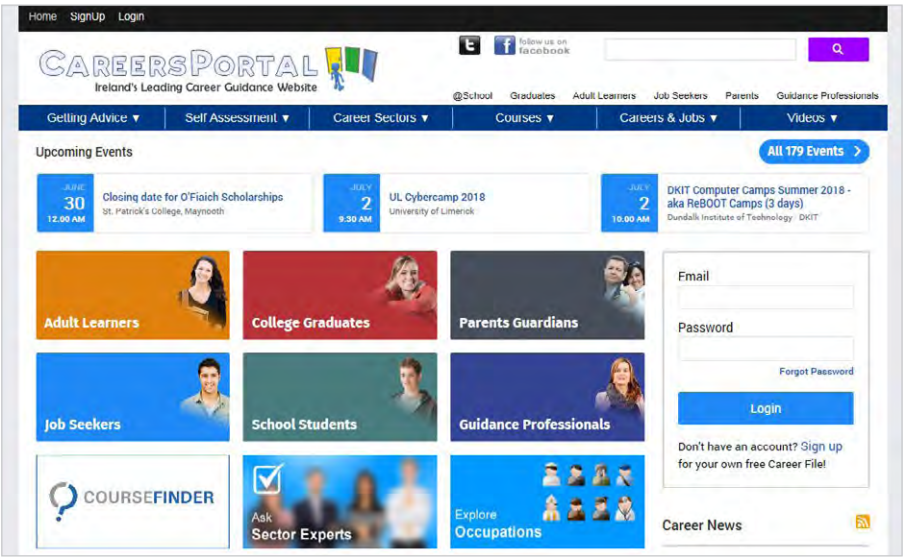
- geographic level: national
- founding year: 2008
- type of initiative: combined
- is the initiative a single access point? No
- target groups: school; higher education; college students; unemployed; employed guidance counsellors; teachers; professors, parents
- providing organisation: Durrow Communications Limited
- stakeholders involved and their role: government; businesses; academia; civil society; other (external job matching websites).
  Direct and continuous engagement with stakeholders is a catalyst in the functioning of CareersPortal.ie.

Challenges addressed

- Improve matching between skills and jobs
- Promote self-assessment
- Aid transition from school education to career selection
- Tackle unemployment
- Other: reduce early school leaving

CareersPortal.ie is an Irish resource dedicated to those who want to plan their career, from school students, to college graduates or the unemployed seeking employment.

Its mission is to provide the most up-to-date career information to its users in an integrated, innovative, supportive and engaging manner.



Policy objectives

- career management skills
- access to lifelong guidance services
- improving careers information
- guidance practitioner training and qualifications
- ICT in lifelong guidance
- improving employability and supporting older workers
- supporting people at risk and disadvantaged groups

What is the role of LMI and how is it used in CareersPortal.ie?

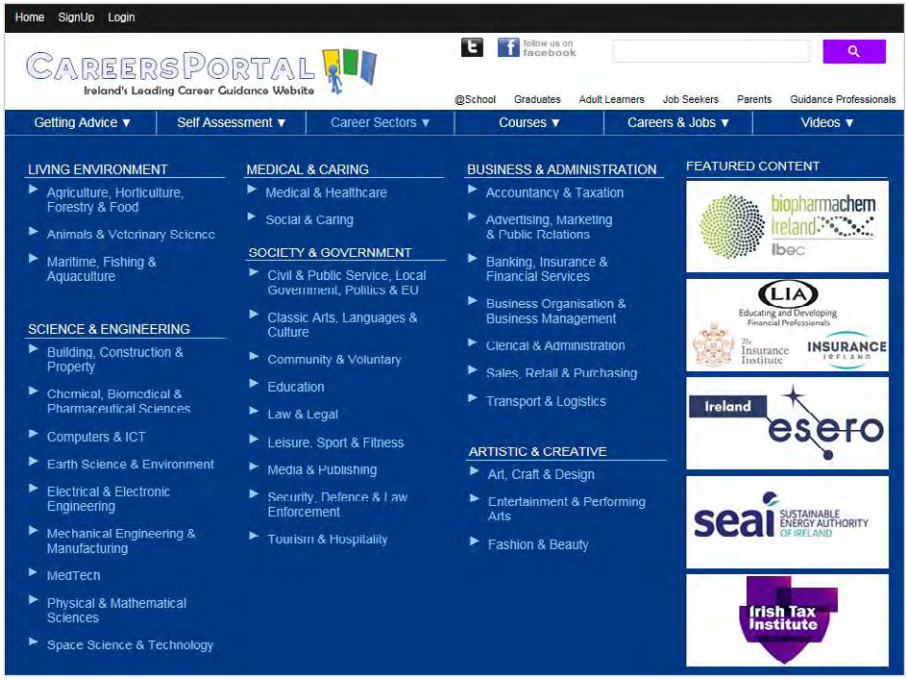
- Real-time LMI
- Effective job matching
- Personalised education advice
- Innovative user profiling
- Occupation information
- Interoperability with job-search engines

Labour market statistics are provided in cooperation with the Irish expert group on future skills needs, with a clear indication on skills shortages.

Hundreds of job types are profiled and information is provided per occupation along with job vacancies, graduate training programmes and internships.

Education and training opportunities are also outlined, together with an extensive section on apprenticeships.

Teaching resources for career guidance professionals, leaving certificate vocational programme teachers, transition year coordinators and relevant subject teachers at both second level education and in the adult guidance services, are also provided (REACH+ and My-Future+).



What role does ICT play in CareersPortal.ie?

- Interactive online tools
- Mobile application
- Connection with third parties (LMI, PES, etc.)
- Personalised information storage
- Social media utilisation

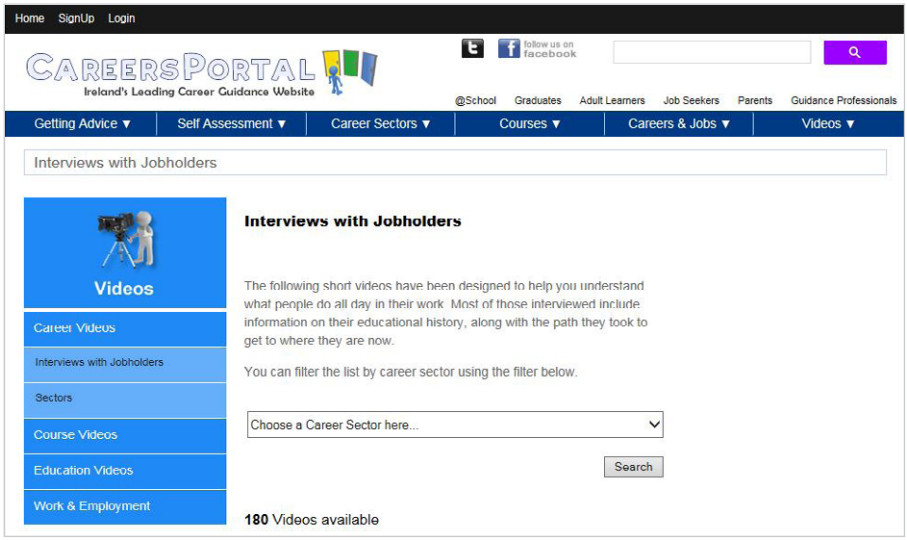
ICT is a catalyst for CareersPortal.ie, as it relies on sophisticated use and structuring of labour and education related information. It is user-friendly and it is also available for tablet and smartphones.
Information on employment sectors is supported by videos.
All visitors can create and manage their own free online career file.
Additional domains are used for specific services, (myfuture.ie, workxperience.ie and saoloibre.ie).

What results and impacts have been achieved by CareersPortal?

Quantitative results: CareersPortal.ie has been growing by around 30% per annum. It is considered the largest and most comprehensive career guidance tool in Ireland.

Qualitative outcomes: The portal has accelerated career learning and supported individuals' personal development. It has been promoting lifelong learning, which had an indirect impact on the reduction of early school leavers, a major issue in Ireland.

Evaluation process:
- continuous feedback by its users, mainly via email;,
- feedback via advisory groups and guidance counsellors;
- via personal communications with students



Success factors

- high level of engagement and close cooperation with practitioners and other stakeholders across all sectors
- formulation of two advisory groups with guidance professionals and other stakeholders
- close relationships developed and maintained with industry
- dual funding mechanism, with the highest proportion coming from the private sector
- provision of training to practitioners and guidance counsellors on how to get the most out of the website
- interpretation and customisation of LMI data into meaningful information for students and practitioners
- timing of portal development
- passion and dedication of its founders and initial team
- wealth of information on sectors and occupations

Points of attention

- Time: information available has to be integrated and updated daily, requiring resources spent on content.
- Maintenance requires high levels of financial support and the portal is primarily funded via private resources.

- The amount of information stored could be intimidating for people with low digital literacy skills.

TRANSFERABILITY ELEMENTS

Socioeconomic/-political context

CareersPortal.ie was developed as a response to the report of the expert group on future skills needs; this recommended the creation of a central careers portal site as means to assist the government in developing a national skills strategy.

Financial requirements

The cost structure of the CareersPortal.ie service mainly comprises the following categories:

- personnel costs;
- operational costs covering expenses for marketing, training of guidance professionals, etc.;
- external experts, who assist CareersPortal.ie to improve its information on the different sectors.

Human resources requirements

Currently 10 employees, supplemented by several external experts, deal with various aspects of the portal, such as guidance and training. Four of the employees are involved with ICT development, two with research, two with training and support, and the rest in management, communication, public relations, and financial matters. Everyone contributes to portal development and feeds in resources across its different functions.

The staff comes from a broad range of education backgrounds, including psychology, career guidance (school and adult), human resources, and education and information technology professionals with many years of experience working in education and career services.

ICT elements

CareersPortal.ie relies heavily on ICT use, including online elements and videos. Asynchronous communications are used for collecting user feedback.

Non-ICT elements

- strong stakeholder engagement
- proper feedback from national statistics service as well as links with other – real-time – LMI databases that provide ad hoc feedback and support

Future developments and trends

- increasing use of social media by young people
- eight new regional skills forums to be established in Ireland
- facelift of the website and hiring of new staff with strong social media and information technology skills

2.3. ICT and LMI cases of the third domain cluster

General thrust	Short Title	Country
Special-purpose initiatives	TET-tori	FI
	Syvonline	SE
	ePortfolio	IT
	Kyvyt.fi	FI
	KomposyT	SK
	LMI for all	UK
	bib-wiki platform for continuous education counsellors	AT
	Vi@s	PT

2.3.1. **TET-tori: Finland**

http://peda.net/veraja/tori

Brief presentation of TET-tori

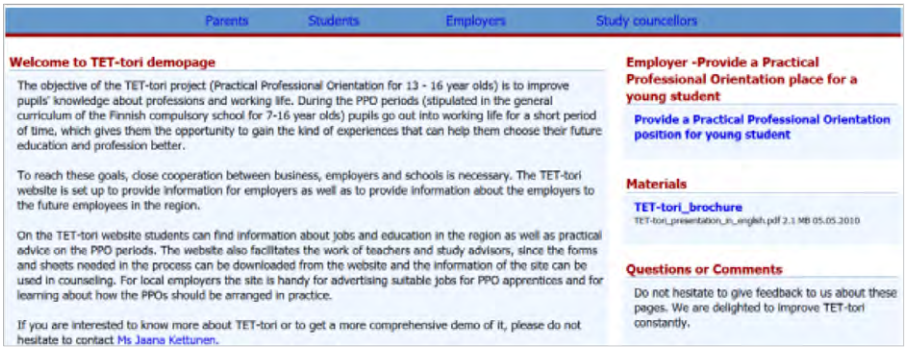
- geographic level: regional
- founding year: n/a
- type of initiative: public
- is the initiative a single access point? Yes
- target groups: school students (13 to 16 year-olds); school counsellors; parents; employers
- providing organisation: Finnish Institute for Educational Research (FIER)
- stakeholders involved and their role: students; parents; businesses; school counsellors; local authorities.

  Local employers and enterprises are the main providers of LMI. School counsellors and local companies have a dual role, being both users and contributors towards general or LMI developments.

Challenges addressed

- **Improve matching between skills and jobs**
- **Aid transition from school education to career selection**
- **Improve guidance/employment services**
- **Knowledge exchange (among education professionals, guidance counsellors, etc.)**
- **Raise guidance awareness**

- TET-tori aims to support school counsellors, students and parents in finding appropriate practical professional orientation (PPO) periods.
- TET-tori helps companies to create contacts with pupils and bring working life closer to school.
- The tool is structured according to geographic regions and supports education guidance provision by supporting the implementation of practical professional orientation.



Policy objectives

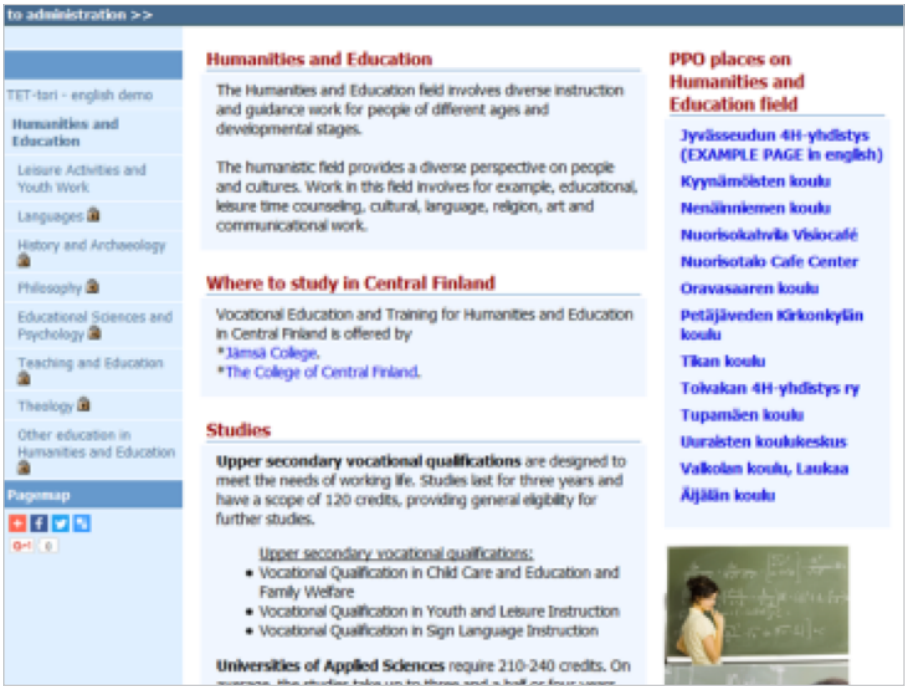
- career management skills
- access to lifelong guidance services
- strategic leadership
- improving careers information
- guidance practitioner training and qualifications
- funding lifelong guidance services
- supporting people at risk and disadvantaged groups

What is the role of LMI and how is it used in TET-tori?

- **Real-time LMI**
- **Effective job matching**
- **Personalised education advice**
- **Blended counselling**
- **Occupation information**
- **Interoperability with job-search engines**

- inform about local employers and PPO vacancies: TET-tori brings together over 5 500 companies and jobs, broken down by field of study
- inform on occupations and respective education requirements: descriptions of over 500 professions and of about 100 occupation fields are included
- inform on study options in the Finnish education system
- assess student performance during their PPO period

TET-tori mainly uses ministerial LMI sources (the Ministry of Education and Culture and the Ministry of Employment and the Economy) and national data sets.



What role does ICT play in TET-tori?

- Combination with offline elements
- Interactive online tools
- Online wiki
- Connection with third parties (LMI, PES, etc.)
- Social media utilisation

TET-tori uses a platform provided by Peda.net, a website with easy-to-use online tools as well as training, research and development services. The University of Jyvaskyla has overall responsibility for administration, maintenance and development of Peda.net.

From a technical point of view, TET-tori is based on open standards (e.g. HTML), but the tools themselves are not open source products.

There is a high level of user-friendliness as TET-tori offers two different navigation bars.

No personal user details are collected from TET-tori.

What results and impacts have been achieved by TET-tori?

Quantitative results: The TET-tori service is currently being used in more than 40 regions of Finland; over 3 500 companies participate in the platform.

Qualitative outcomes:

- promotion of student content management system and employability skills development;
- improvement of the student transition skills;
- reduction in school dropout rates;
- acknowledgement by the employers of the joint social responsibility of supporting the young people in transition from education to work;
- awareness raising of the importance of guidance practices and the PPO periods and their respective activities;
- supporting implementation of the PPO periods;
- increase in the participation of the business community in regional career education activities.

Evaluation process:

- via schools that collect data from stakeholders (students, parents and employers) on student PPO periods. Collection via desktop-based online tools plus currently via mobile devices;

- the TET-tori steering group that, through the participation of school counsellors, allows the collection of user feedback on the effectiveness of the practice.

Success factors

- role of career education as a distinct and compulsory subject in the school curricula in Finland and the role of PPO periods as compulsory, stable and clearly defined parts of the basic education core curriculum
- provides a continuum in the development of employability and career management skills
- combination with the provision of support by trained school counsellors
- cooperation with all target groups and a common understanding of the service need
- very good understanding of the local context
- the tool design was based on research findings on the use of technology in guidance
- highly scalable and easily adjusted to guidance and training activities of different regions
- single LMI access point
- schedules the implementation of PPO periods between local schools and companies
- several publicly funded websites that can offer the required LMI to the tool
- regional lifelong guidance working groups that aim to stimulate positive regional lifelong guidance developments

Points of attention

- future reduction of funding of education through the municipal budget
- information on regional companies and PPO placements offered is provided at the employers' own initiative

TRANSFERABILITY ELEMENTS

Socioeconomic/-political context

TET-tori is highly relevant to the role of ICT and LMI practices within career guidance in Finland, since it collects and disseminates education and LMI via the web, with both regional and national scope.

Financial requirements

A new region wishing to use the tool should cover a registration fee of approximately EUR 2 000 so that the tool is adjusted to include the initial region-specific content, while an annual fee of EUR 80 is required for system maintenance.

Human resources requirements

One part time employee is currently required for the daily operation and maintenance of the TET-tori practice. Although there is no specific staff profile, the person in charge of the operation of the platform has expertise in:

- design and use of information and communications technology (ICT) in career services;
- social media in guidance and guidance in social media;
- ethical issues associated with ICT in guidance and counselling;
- the role of ICT in relation to national lifelong guidance policies.

Regarding the TET-tori project team staff, there is no special training offered.

ICT elements

The technological infrastructure required for the initial development and for the operation and maintenance of the tool does not exceed the requirements of a simple website:

- front and back end webserver;
- database;
- content management system.

The software products used to develop TET-tori are based on open standards. The merge of the LMI from multiple sources and its redirection to the tool users is made via direct links and RSS feeds.

The use of the practice from its target groups does not require advanced e-skills or technical infrastructure.

Non-ICT elements

Students can use the tool either individually or in cooperation with their school counsellor.

Future developments and trends

- implementation of online services and public access

- trend for more customised individual learning programmes for students affecting career education and relevant ICT and LMI guidance tools
- a new version of the service is under construction and will be launched in early 2017 with a series of improvements, including its content and overall structure

2.3.2. **Syvonline – Education Centre of Gothenburg: Sweden**

http://www.syvonline.se/

syvonline

Brief presentation of Syvonline

- geographic level: regional; national
- founding year: 2012
- type of initiative: public
- is the initiative a single access point? yes
- target groups: guidance counsellors; teachers; professors; immigrants
- providing organisation: Gothenburg Region Association of Local Authorities
- stakeholders involved and their role: guidance practitioners; government; businesses; academia; media; municipalities; chambers.
  Cooperation with stakeholders develops LMI and guidance material provided on the platform.

Challenges addressed

- Aid transition from school education to career selection
- Improve guidance/employment services
- Knowledge exchange (among education professionals, guidance counsellors, etc.)
- Raise guidance awareness
- Increase the interaction between schools and professional life

Syvonline aims to enable practitioners to offer better services as well as assist teachers to introduce guidance practices in the frame of their daily teaching routines. It features:

- the news section;
- the research bank;
- the method bank;
- the Syvonline forum;
- the REKAS tool that provides regional forecasts and LMI on career and education paths.

Policy objectives

- access to lifelong guidance services
- assuring the quality of lifelong guidance provision
- strategic leadership
- improving careers information
- guidance practitioner training and qualifications
- ICT in lifelong guidance
- raising the skills and qualifications of young people
- raising the skills and qualifications of adults
- improving employability and supporting older workers
- supporting people at risk and disadvantaged groups

What is the role of LMI and how is it used in Syvonline?

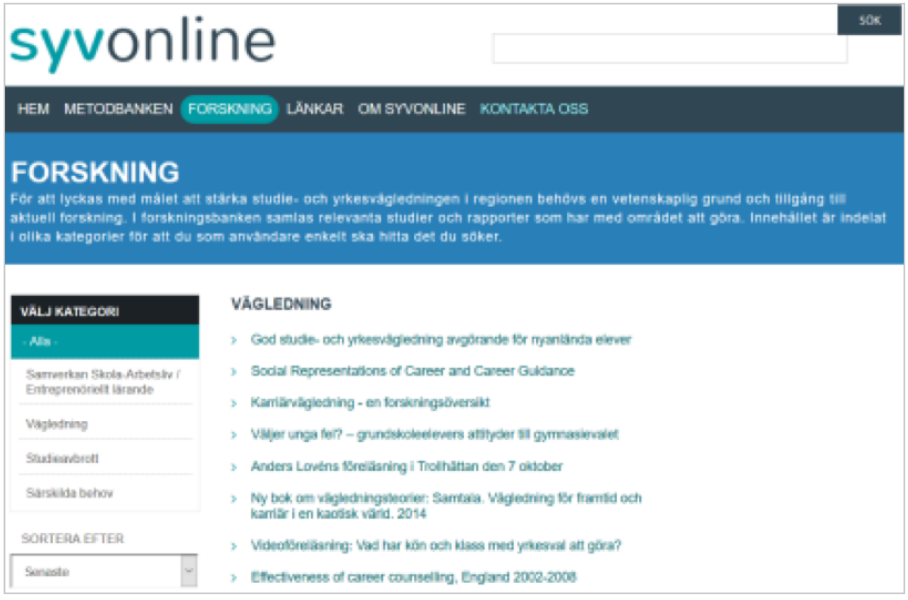
- Real-time LMI
- Scientific research on guidance
- Guidance methods
- News relevant to education guidance
- Matching of regional education to labour market

LMI is collected from various sources and provided as follows:

- news is grouped under eight main themes:
  - labour market;
  - continuing education;
  - disability issues;

- laws and regulations;
- school work;
- news regarding the National Agency for Education;
- studies;
- guidance and counselling;

- the methods bank includes guidance methods, tips and exercises to serve target group needs;
- the research bank provides current LMI about scientific research on guidance;
- the REKAS tool provides LMI on matching regional education to the labour market.

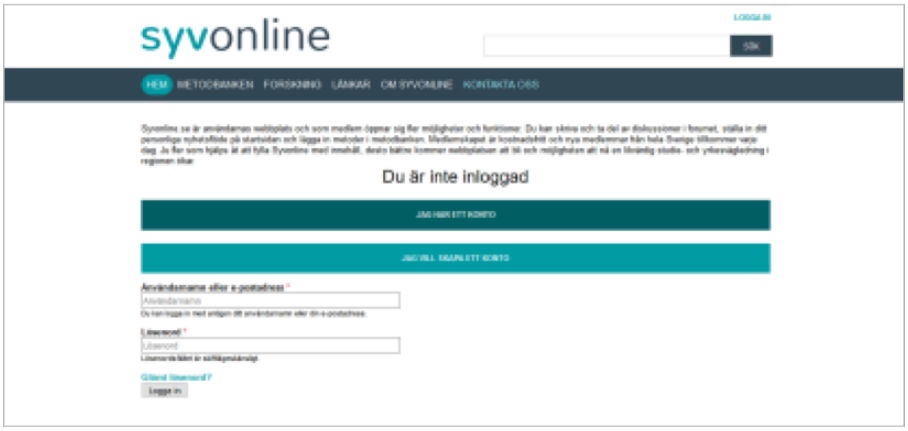


What role does ICT play in Syvonline?

- Combination with offline elements
- Interactive online tools
- Online wiki
- Customised RSS news feed
- Social media utilisation

The infrastructure requirements of Syvonline are those of a simple website. LMI data and all other information are entered through its content management system.

Syvonline and its different tools are quite easy to use and do not require advanced user e-skills. The structure of the website and of its content has been reported to be user-friendly.



What results and impacts have been achieved by Syvonline?

Quantitative results: In 2015, Syvonline had around 48 000 visits and attracted around 10 000 users.

Qualitative outcomes: The platform can help guidance practitioners by offering them increased knowledge on guidance and understanding of opportunities for cooperation; it can also improve cooperation between schools and working life.

Evaluation process: No systematic process was reported. A network of guidance practitioners provides feedback on the website. Google analytics used. Practitioner reference groups are also organised.

Success factors

- alignment with the regional strategy for growth and the national curricula and lifelong guidance framework
- increased level of cooperation between Syvonline and municipalities and among municipalities themselves

- ability to empower school staff to assume guidance activities as the national curricula foresees
- single access point for a diverse range of information
- news and guidance advancements with local and national scope
- active support and promotion by the National Agency for Education
- largely user-driven design, tailored to specific student target groups
- increased accessibility and convenience provided by an ICT online cooperation platform

Points of attention

- uncertain sustainability in terms of funding
- local news is not suited to national use
- wider adoption and use among school staff
- forum does not attract much activity

TRANSFERABILITY ELEMENTS

Socioeconomic/-political context

The National Agency for Education has been engaged in Syvonline since its development phase and has also spread information about the platform and its material.

Syvonline is aligned with the frameworks promoting ICT tools and digitisation at regional level, since it is actively supported by the Region Västra Götaland and the respective municipalities; and with the new ICT for schools strategy that aims to stimulate the digitisation in every aspect of the school system, including guidance.

Financial requirements

The GR SYVO project that led to the development of the practice received funds of SEK 6 183 444 for 2012-14. For 2014-16 Syvonline, funded by Region Västra Götaland, had an annual budget of SEK 700 000.

Human resources requirements

The daily operation and maintenance of Syvonline is the responsibility of a team of four employees: a project manager who coordinates the project and is responsible for cooperation among the municipalities; a web editor, responsible for the research conducted; a process manager with a focus on guidance methods and practitioners; and a programmer who is responsible for the coding of the portal and the information technology part of the practice.

There is no standard profile in terms of education background for the staff that works on the platform.

ICT elements

- Syvonline does not require advanced infrastructure ICT requirements.
- Syvonline tools are considered easy to use and do not require advanced e-skills or respective training.
- Syvonline offers customised RSS news feed.

Non-ICT elements

The Syvonline platform is combined with face-to-face activities with practitioners to stimulate peer learning and enhanced high quality services tailored to their target groups.

Cooperation with stakeholders contributes to its further development and sustainability.

Future developments and trends

Syvonline will focus in the coming years on providing guidance methods that will assist practitioners to work better with those newly arrived to Sweden.

It will also aim to find sustainable funding.

2.3.3. **ePortfolio: Italy**

https://www.eportfoliobilco.it

ePortfolio

Brief presentation of the ePortfolio

- geographic level: national
- founding year: 2010
- type of initiative: public
- is the initiative a single access point? No
- target groups: school students; higher education; college students; unemployed; employed
- providing organisation: CIOFS-FP Piedmont (Centro Italiano Opere Femminili Salesiane – Formazione Professionale)
- stakeholders involved and their role: government; businesses; civil society. Public organisations and businesses are formal LMI providers; local and regional associations and institutions provide informal LMI. Real users who participated in testing sessions have provided extensive feedback contributing to the portal design and development.

Challenges addressed

- Improve matching between skills and jobs
- Promote self-assessment
- Tackle unemployment

ePortfolio is an online repository of experience, qualifications and competences to be maintained and updated throughout a person's educational/academic/professional course; it consists of the following sections:

- me: user's introductory page;
- me and work: users enter their work experience and match it with one of the occupation descriptions;
- me and training: users enter their training experience;
- me over work: users enter their experiences outside formal employment and training;
- my skills: a summary report that includes different types of skills, based on the user's previous entries;

- my evidence: previous experience in work, training or other activities is matched with related evidence;
- documents area/downloads: users extract a PDF file with their profile data in a structured form;
- practitioner/administrator: only for practitioners, with management tools, statistical information on users, etc.

Policy objectives

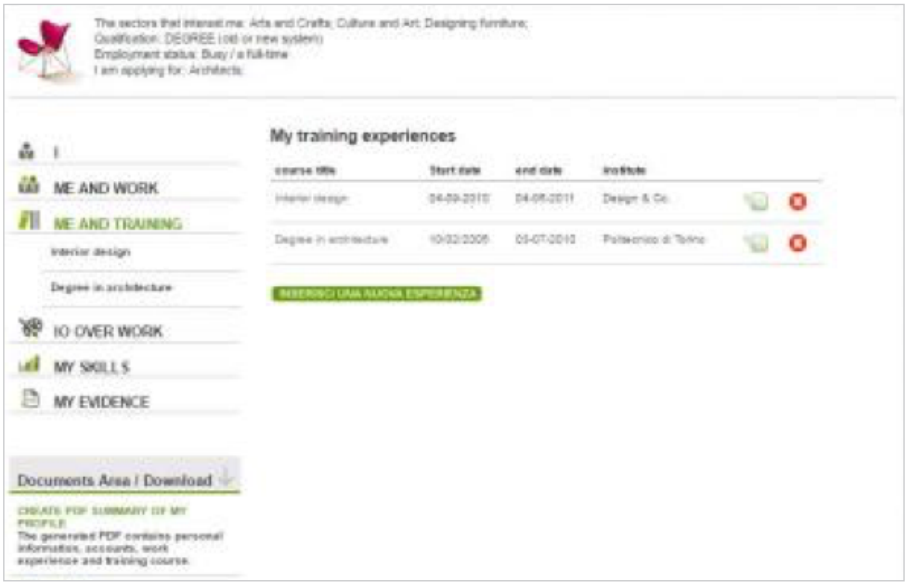
- career management skills
- access to lifelong guidance services
- assuring the quality of lifelong guidance provision
- assessing the effectiveness of lifelong guidance provision
- ICT in lifelong guidance
- improving employability and supporting older workers
- supporting people at risk and disadvantaged groups

What is the role of LMI and how is it used in the ePortfolio?

- Effective job matching
- Innovative user profiling
- Blended counselling
- Occupation information
- Interoperability with job-search engines

The LMI originates from various sources, such as data collected by Bil. Co centres and public databases. The most regular third-party source of LMI is Cliclavoro, the public labour platform. The LMI material is structured according to the target groups addressed; LMI from Cliclavoro includes a list of professions, labour market statistics and job offerings. The CIOFS-FP website is another source of LMI, as it provides studies and reports regarding labour market thematic areas such as mobility, skills surveys, etc.

LMI is regularly updated, as part of a documented process.



What role does ICT play in the ePortfolio?

- Combination with offline elements
- Connection with third parties (LMI, PES, etc.)
- Personalised information storage
- e-portfolio

The practice is a combination of digital web-based application and hands-on vocational guidance and orientation carried out at the Bil.Co centres.

The application is managed by an external ICT company, also responsible for applying modifications and improvements.

The application connects to various external data sources for synchronisation of data, job matching and LMI integration; the technical team had to establish customised methods of data synchronisation and integration.

What results and impacts have been achieved by the ePortfolio?

Quantitative results: The practice currently hosts over 6 000 registered users and over 2 000 companies.

Quantitative outcomes: Users feel more confident about their skills and competences and are able to perceive and chart a more knowledgeable course in life and work. Companies are able to view candidates' qualifications, skills and competences in structured form, a characteristic which greatly supports decision-making.

Evaluation process: After the completion of each course, an analytic skills dossier is provided to attendees to present qualification evidence on skills acquired during the course. CIOFS-FP Piedmont and Bil.Co maintain analytic statistics. Every attendee of a course and every ePortfolio user is required to complete a satisfaction questionnaire. Six months after the end of a course, users are contacted by the operators for a brief telephone interview to see the outcomes of the services.

Success factors

- aids user self-reflection and self-assessment
- usability, simplicity and ease of use of the application
- strong focus on privacy and content validation

Points of attention

Absence of a formal national list of professions.

TRANSFERABILITY ELEMENTS

Socioeconomic/-political context

The economic crisis has increased the significance of guidance practices, as they can become a tool to help increase labour mobility and potential. Bil.Co centres were used as a model for the Piedmont public employment services and CIOFS-FP Piedmont maintains an excellent relationship and frequent communication with the City of Turin and public authorities.

Financial requirements

The development cost for the application was EUR 80 000 covering the design, technical implementation and testing, including the fee for the external technical team. The annual maintenance and support costs are estimated at EUR 20 000 per year.

Human resources requirements

All practitioners must complete an obligatory 30-hour training course on the ePortfolio.

ICT elements

- does not make heavy use of ICT and does not require large scale hardware implementation;
- does not require advanced information technology literacy and can be successfully operated by novice users.

Non-ICT elements

Unique combination of hands-on training, guidance and counselling which promote long-term self-assessment.

Via continuous feedback from stakeholders where available, CIOFS-FP Piedmont adapts its strategy and practices to reflect the current labour market situation.

Future developments and trends

- frequent improvement using feedback from practitioners and users
- merge ePortfolio and Bil.Co websites to produce a complete guidance and LMI platform
- introduction of a mobile version of the application to improve accessibility and attractiveness, especially for younger users
- introduction of new features on operational and technical levels to target disabled users, such as immigrants
- intensification of resource allocation to promotional activities on different channels
- conduct formal presentations of the application and accompanying practice to public authorities, mainly public employment centres

2.3.4. **Kyvyt.fi: Finland**

https://kyvyt.fi

Kyvyt.fi

Brief presentation of Kyvyt.fi

- geographic level: national
- founding year: 2010
- type of initiative: private
- is the initiative a single access point? No
- target groups: upper secondary school students; vocational institutions; higher education institutes; associations
- providing organisation: Discendum Ltd
- stakeholders involved and their role: businesses; academia; students. Stakeholders are crucial to Kyvyt.fi, which is a tool largely based on informal LMI offered by its end-users/students.

Challenges addressed

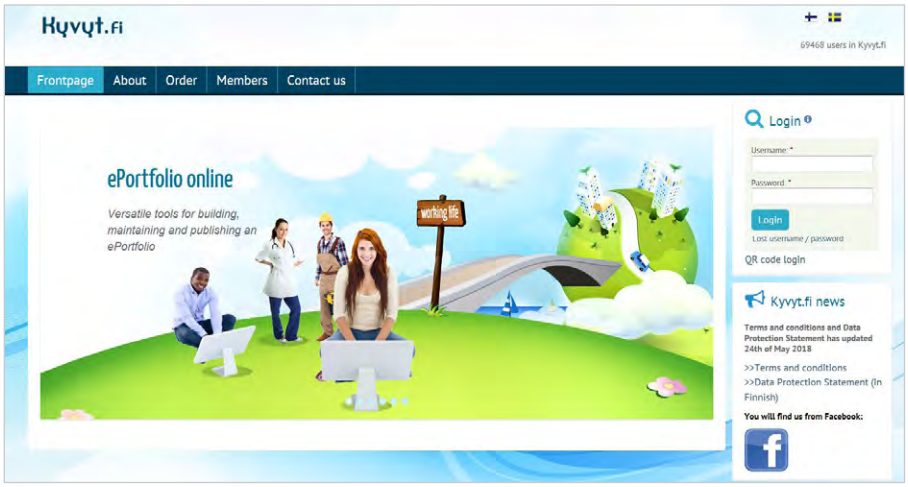
- Improve matching between skills and jobs
- Promote self-assessment
- Aid transition from school education to career selection
- Improve guidance/employment services
- Knowledge exchange (among education professionals, guidance counsellors, etc.)
- Raise guidance awareness

Kyvyt.fi is a personal learning environment and an ePortfolio service that allows gathering of all educational and professional information in one place during one's lifetime.

For students, Kyvyt.fi acts as a place where they showcase their skills and know-how.

Teachers and career counsellors use the tool to monitor the progress of the students/users.

Kyvyt.fi can also be applied in a workplace environment where supervisors can monitor and assess their employees' and trainees' skills and training process.



Policy objectives

- career management skills
- access to lifelong guidance services
- guidance practitioner training and qualifications
- ICT in lifelong guidance
- raising the skills and qualifications of young people
- raising the skills and qualifications of adults
- improving employability and supporting older workers

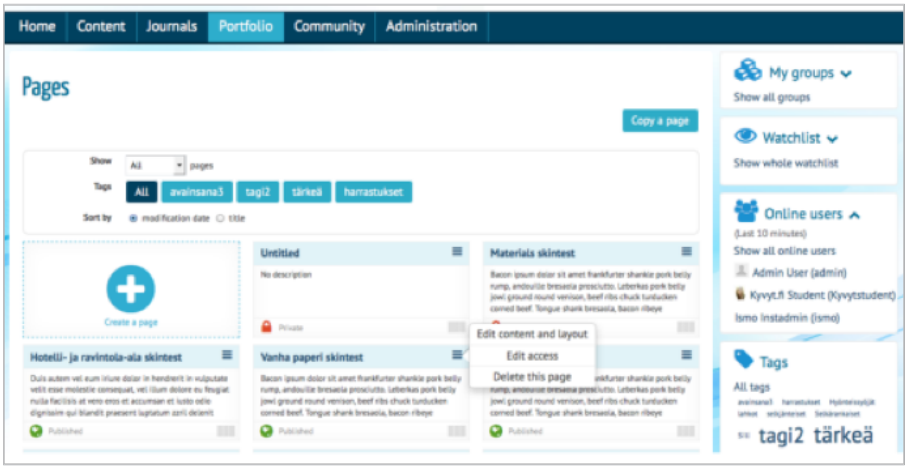
What is the role of LMI and how is it used in Kyvyt.fi?

- Innovative user profiling
- Data entered by end-users
- Creation of ePortfolios with students' skills and competences
- Customisation of LMI through user adaptation according to needs

The Kyvyt.fi LMI source is its end-users, specifically the ePortfolios and the documented skills and competences of students who use the tool. The LMI is the user's property and it is their decision whether they will share it with others.

Users can also integrate content that has been created elsewhere, for example YouTube, Google Drive, Microsoft OneDrive, SlideShare, Picasa, etc. This content is entered in Kyvyt.fi by each respective user.

Kyvyt.fi is not connected with any other online source of LMI such as official platforms of the Employment and Economic Development Offices and of the Ministry of Education and Culture.



What role does ICT play in Kyvyt.fi?

- Interactive online tools
- Personalised information storage
- Social media utilisation
- Open source
- e-portfolio

The Kyvyt.fi ePortfolio service is based on the Mahara software; it also includes features that are not open source since they are the product of Discendum.

ICT infrastructure requirements are limited to a web server and a database server.

Special attention has been paid to ensuring data protection:

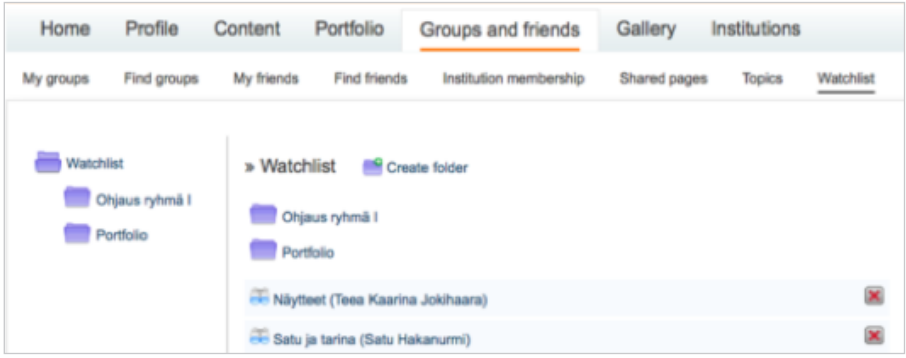
- several levels of security measures are implemented;
- physical access to servers is restricted and only authorised personnel is allowed;
- backup is applied daily;
- users determine which content to share and with whom;
- all servers hosting Kyvyt.fi data are located in Finland.

What results and impacts have been achieved by Kyvyt.fi?

Quantitative results: Kyvyt.fi is currently being applied to nearly 200 organisations and 60 000 end-users. Around 57 000 end-users have created their ePortfolios on Kyvyt.fi.

Qualitative outcomes: The practice enables the acquisition of important content management systems, empowers end-users to showcase better their skills and competences, as well as helping employers to distinguish the job candidates fit for their skills needs and supporting the duties and responsibilities of teaching staff and guidance practitioners.

Evaluation process: Feedback is received via the Kyvyt.fi helpdesk.



Success factors

- lifelong guidance provision
- highly personalised to user and practitioners needs
- users can integrate different types of media within their portfolios
- provision of links with social media accounts
- empowerment of teachers and guidance practitioners to offer better services to students
- ease of adopting the service and no setup cost or other kind of installation
- higher customisation of the ePortfolio to the Finnish context and to the needs of its specific target groups due to the open source software

Points of attention

- The Mahara software does not support the use of multiple languages.
- Numerous features require training by end-users.
- Students are sceptical about making their content available to others.

- Low interest by employers.
- Difficulty of education institutions to participate in a generic platform.

TRANSFERABILITY ELEMENTS

Socioeconomic/-political context

Kyvyt.fi is affected by the general guidelines for guidance that outline the Finnish lifelong guidance system: the integration of guidance as a compulsory subject within the education system; and the integration of ICT as a compulsory element of career education within the national curricula.

Financial requirements

The commercial roll-out of Kyvyt.fi is targeted at institutional level, with organisations paying an annual fee for the basic service that ranges from EUR 300 to EUR 2 500, depending on the size and type of the organisation (colleges, universities, corporations and organisations).

Human resources requirements

Kyvyt.fi is currently being operated and maintained by a team of six to seven people, with following roles: product manager; trainers; information technology staff and helpdesk.

All the above staff work part-time. The trainers have university degrees related to education and experience that revolves around teaching and counselling.

ICT elements

- Users need to have an adequate ICT literacy level.
- Training is provided for teachers, counsellors, technical support personnel and other users and is adapted to the needs of each client.

Non-ICT elements

The tool is largely based on informal LMI offered by its end-users voluntarily.

Future developments and trends

- overall context of Finland promoting digitisation of services and pushing the uptake of ICT and LMI methods within the national lifelong guidance system
- more customised individual learning programmes for students also affecting career education

2.3.5. **KomposyT: Slovakia**

https://www.komposyt.sk/

KomposyT

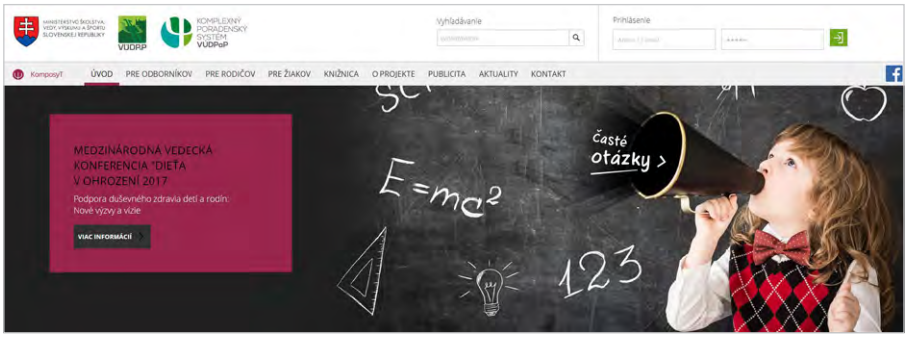
Brief presentation of KomposyT

- geographic level: national
- founding year: 2013
- type of initiative: public
- is the initiative a single access point? Yes
- target groups: school students; higher education; college students; guidance counsellors; teachers; professors; parents
- providing organisation: Research Institute for Child Psychology and Pathopsychology (VÚDPaP)
- stakeholders involved and their role: government, academia, other (local centres).
  VÚDPaP together with a network of 80 local centres for educational and psychological counselling and prevention. Expert users are recruited from this network. The initiative is endorsed by the Ministry of Education of Slovak Republic in terms of funding.

Challenges addressed

- Promote self-assessment
- Aid transition from school education to career selection
- Improve guidance/employment services

KomposyT addresses the need for targeted interventions tailored for children with special educational needs, in particular where they tend to encounter severe obstacles in their transition from school to work. An online platform is operated to support professional diagnostics, one-to-one counselling and easy access to different sorts of information by children with special educational needs and their parents. Emphasis is also given to capacity building among professionals working in this field. The initiative aims at building an ever-growing evidence base for the further development of diagnostic tools and guidance materials.



Policy objectives

- career management skills
- access to lifelong guidance services
- assuring the quality of lifelong guidance provision
- guidance practitioner training and qualifications
- ICT in lifelong guidance
- improving careers information
- raising the skills and qualifications of young people
- supporting people at risk and disadvantaged groups

What is the role of LMI and how is it used in KomposyT?

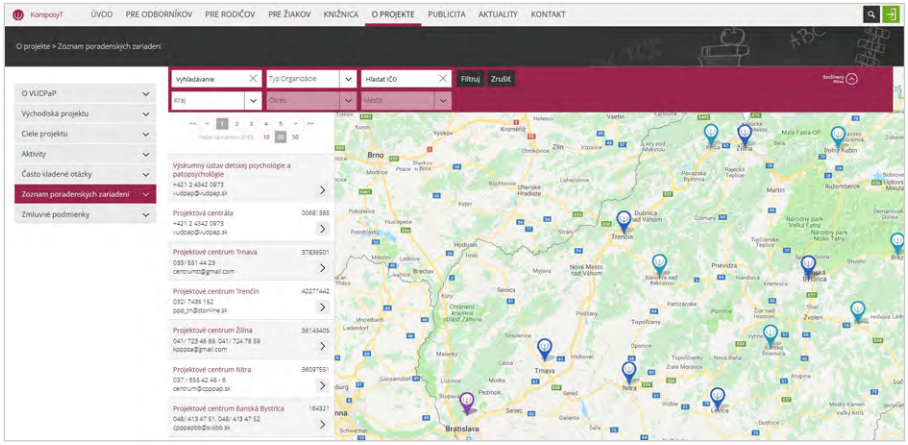
- Occupation information
- Innovative user profiling
- Personalised education advice
- Blended counselling

KomposyT relies on the combined provision of publicly accessible LMI with relevance to pupils with special educational needs and dedicated expert tools in the form of a one-stop-shop.

Available information, specifically tailored to students, ranges from success stories of young people who have managed to enter into the labour market to descriptions of occupation fields and decision-making strategies for personal career development. Such information is accompanied by self-evaluation tests and online games for relaxation.

Information addressing parents includes guidance on how to understand better the situation of their children and how to support them in making career decisions. There is also information on where to seek professional support and links to external information sources.

In a password-protected area of the platform, professionals can access a range of expert tools and supportive information. After logging into the system, a personal dashboard enables easy access to diverse diagnostic tests. Currently, more than 30 tests are available through the platform: each has a comprehensive description of how to fill in the test questions and – equally important – how to interpret its results. In relation to the latter, the platform supports instant analyses of client-related data gathered during the testing procedure. A set of training modules is provided to registered expert users.



What role does ICT play in KomposyT?

- **Combination with offline elements**
- **Interactive online tools**
- **Personalised information storage**

- KomposyT is a publicly accessible web service.
- Selected documents are available for downloading.
- Self-assessment tools and online games are available for interactive online use.
- Resources available through the KomposyT platform can be combined with a complementary on-site counselling methodology supported by different materials.
- Password-protected access to the closed area of the platform is enabled by the administrator only on completion of a dedicated training course provided by VÚDPaP staff.

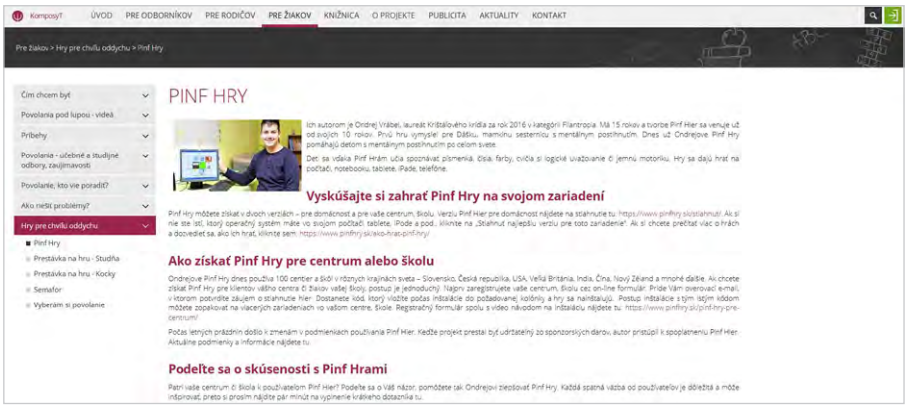
- With consent, registered experts are also able remotely to administer their own client database.
- With consent, a client database enables electronic storage of information on diagnostic tests performed and outcomes achieved.
- A set of thematic telelearning modules can be selected according to the expert user's specific interests.

What results and impacts have been achieved by KomposyT?

Quantitative results: Usage statistics have increased from 102 unique visitors in 2014 to 32 178 visitors during 2015; almost 2 000 expert users are currently registered on the platform.

Quantitative outcomes: Career counsellors and education guidance practitioners save time through the ICT-supported analysis of performance data gathered, resulting in more time generally available for interacting with their clients. The platform also provides an easily accessible single source of information on how test results are to be correctly interpreted, which contributes to achieving better overall service quality. School-based counsellors tend to rely on KomposyT as a quality assured evidence base when interpreting their counselling role within day-to-day teaching practices. This can help in improving the effectiveness of school-based career counselling provided to pupils with special needs.

Evaluation process: Three rounds of user testing have been carried out during the development phase of the KomposyT platform. Beyond these activities, no dedicated user evaluation has taken place yet.



Success factors

- political willingness to improve the quality of existing career guidance services and availability of strong scientific expertise in relation to children with special educational needs by involving a specialised research institution
- availability of financial resources from the European Social Fund acted as a facilitating factor in developing the approach
- pursuing a needs-driven development approach, involving practitioners in defining functional and non-functional design requirements
- well established relationships between the lead organisation and key stakeholders
- extensive awareness raising and promotional measures addressing both professional and non-professional users

Points of attention

- Not all practitioners immediately welcomed using the online platform within day-to-day practice.
- Uptake of KomposyT among pupils with special educational needs did not happen automatically.

TRANSFERABILITY ELEMENTS

Socioeconomic/-political context

At policy level, effective career education, career guidance and counselling are seen as viable approaches to reducing current levels of youth unemployment. However, pupils with special educational needs tend to face considerable difficulties in benefitting from mainstream services. The establishment of a specialised research institution, VÚDPaP, in the 1960s has contributed to the compilation of a strong scientific knowledge base and to the development of related personal resources respectively. This helped in developing services specifically tailored to the needs of disadvantaged children and youngsters.

Financial requirements

No information is available on the overall costs of development and maintenance of the platform. Operation and maintenance and related offline activities are financed through the Ministry of Education of the Slovak Republic.

Human resources requirements

Maintenance of the KomposyT system and implementation of related training measures are achieved by the staff of a specialised institute, VÚDPaP. Technical support is provided by a contracted ICT provider. The research part of the overall system is pursued by VÚDPaP in cooperation with the Comenius University, Faculty of Social and Economic Sciences.

ICT elements

- KomposyT is available to the users as a web service, which does not require local software installations.
- The technical infrastructure relies on a combination of proprietary software and open source components.
- The integration of the diverse components is achieved within a service-oriented architecture (SOA) platform.
- A high standard for the password-protected area is maintained in relation to data privacy and data protection, comparable to those accepted for the purposes of online banking services.

Non-ICT elements

The overall approach seems to fit with the relevant national system structures: school-based counselling provision complemented by specialised services delivered through a network of local centres for educational and psychological counselling and prevention, all methodologically supervised by a specialised research institute.

Future developments and trends

- extension of functionalities currently provided by the platform, with a view to supporting interpersonal exchange of users by means of some kind of messaging functionality;
- possible extension of current conceptual focus beyond pupils with special educational needs. Connection of the platform with the government cloud to be set up by 2020 according to the national eGovernment strategy.

2.3.6. **LMI for all: the UK**

http://www.lmiforall.org.uk

LMI for All

Brief presentation of LMI for all

- geographic level: national
- founding year: 2012
- type of initiative: public
- is the initiative a single access point? Yes
- target groups: application and software developers; third party organisations (schools/careers services, etc.)
- providing organisation: Institute for Employment Research (IER) at the University of Warwick; Pontydysgu and Raycom
- stakeholders involved and their role: application developers; others. Application developers are involved as users/career organisations, developers, schools, further education colleges, higher education institutions, recruitment agencies and jobsites represent the wider national stakeholder community.

Challenges addressed

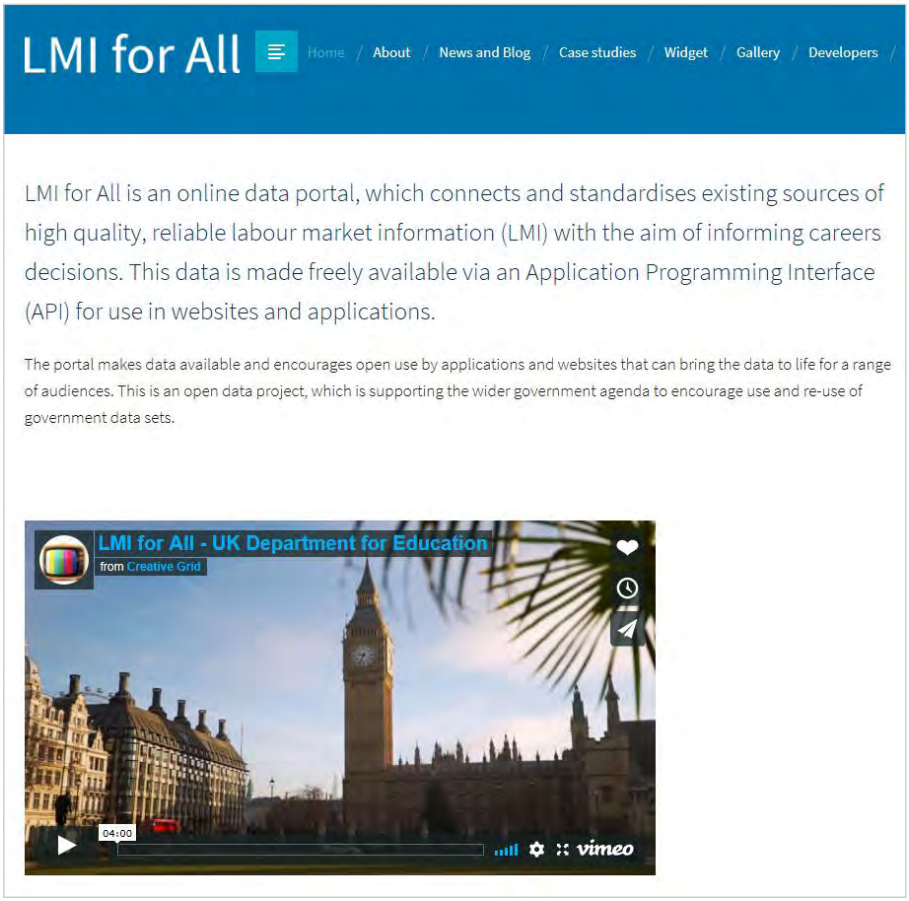
- Improve matching between skills and jobs
- Facilitate transition from school education to career selection
- Improve guidance/employment services

LMI for all is a research and development project that has been under way since 2012. The primary rationale was to gather high quality, reliable and robust publicly funded data into one place where it can be used to support individual career transitions using LMI.

The database is an open access data service, which makes its LMI freely available to web developers able to make use of the data potential to build applications which work for the specific needs of certain target groups in the context of career guidance. It is used to improve the effectiveness of career support services and tools, relating to the way they embed online LMI into their wider guidance on learning and work.

Using these data has allowed career services to bring context to job profiles with current trend detail, informed forecasts and localised live vacancies to support decision-making processes. Drawing the data from an independent, impartial, and reliable data source adds the stamp of credibility

and reassurance expected from professional guidance practitioners, who assess information with a great deal of scrutiny.



Policy objectives

- career management skills
- access to lifelong guidance services
- assuring the quality of lifelong guidance provision
- improving careers information
- ICT in lifelong guidance

What is the role of LMI and how is it used in LMI for all?

- Real-time LMI
- Occupation information

LMI for all looks to collate information from various different sources to answer the most common careers questions. It brings together existing and distinct sources of national LMI data and cross references them to make one single searchable and usable API.

LMI data involve:

- 369 occupations;
- 75 industries;
- employment status;
- highest qualification held;
- details on employment differences across UK regions;
- gender differences;
- details on pay;
- details on skills required.

The API infrastructure of 'real-time data' also means that any updates to the unique data sources can be streamed through the API, and therefore also into any applications/websites that use the LMI for all data.

What role does ICT play in LMI for all?

- Interactive online tools
- Mobile application
- Connection with third parties (LMI, PES, etc.)
- Open source

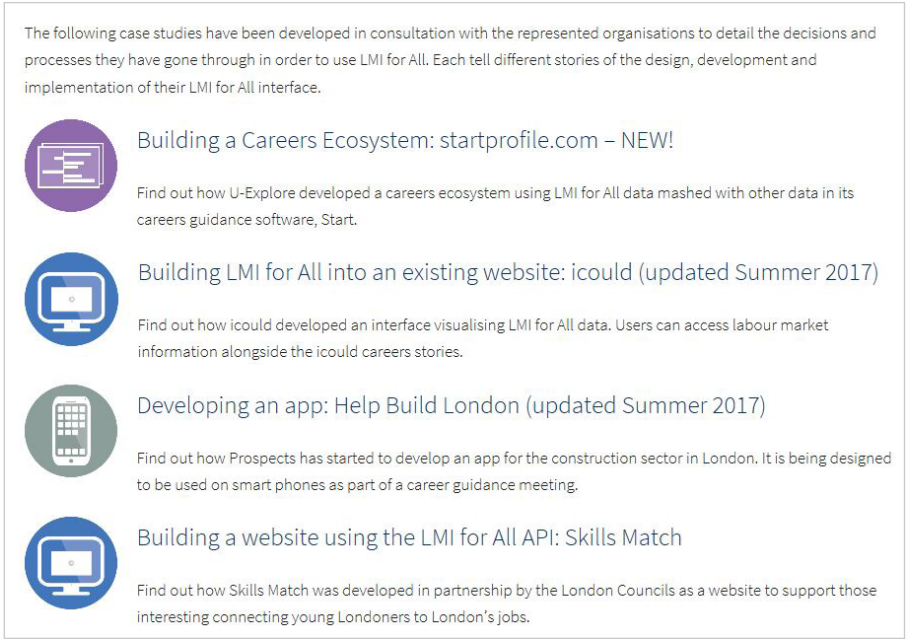
The role of ICT is associated with the technical infrastructure and software of the API, ensuring that data is reliable, up-to-date and flexible to allow external users to search the database. It is the developer's responsibility to identify how end products, such as mobile applications and career websites, can use the data in delivery of career guidance.

What results and impacts have been achieved by LMI for all?

Quantitative results: The API tracked 11 411 hits between 1st May 2015 and 30th March 2016; however, LMI for all does not interact with people making career choices directly and the impact on the ultimate end-user is difficult to assess.

Qualitative outcomes: The overall long-term impacts of the practice are associated with the advantages of making robust, useful data accessible to those making career choices. This includes raising awareness of issues such as pay, opportunities, and labour supply and demand. The potential benefits for end-users are varied, as the data can be used to develop applications and websites that support workers in a specific sector in finding employment in a specific geographic area, or by school students to support their education around the labour market realities. The LMI for all case studies (pictured) demonstrate several examples of how the data can be used in specific cases of career-related tools, see: http://www.lmiforall.org.uk/case-study_intro/

Evaluation process: Informal feedback is gathered at dissemination days and through users' case studies.



Success factors

- consistent and innovative in response to addressing evolving political agendas and common needs across a wide range of stakeholders
- comprehensive data offer
- mplementation of robust, secure, fit-for-purpose technical infrastructure
- increased awareness and understanding throughout the stakeholder community of its existence as a high quality, free resource

Points of attention

- technical barriers associated with expanding the infrastructure of the API.
- stakeholder engagement: increasing the number of applications developed using the API.
- potential problems associated with reliability of data.

TRANSFERABILITY ELEMENTS

Socioeconomic/-political context

In terms of government agenda, the practice has been mostly influenced by:

- the *Open data white paper*, setting out clearly how the UK will continue to unlock and seize the benefits of data sharing in the future in an effective, creative and responsible way;
- the *Competitiveness agenda*, a plan aiming to put the UK on a sustainable path of economic growth.

Financial requirements

Over the lifetime of the practice the government has invested an approximate figure of GBP 1 000 000; the creation of an application would take developers approximately 5 to 10 working days at a cost of between GBP 7 000 and GBP 13 000.

Human resources requirements

Around 21 experts have contributed during different phases of the project, representing three different strands of expertise: data researchers (10 IER researchers), technical infrastructure (eight technical staff) and stakeholders group (three subject experts from IER).

ICT elements

- a stable and reliable technical system
- the availability of reliable, robust, comparable sources of national and regional LMI, and a willingness of all owners to combine different data sources into one API
- engagement and involvement of application developers

Non-ICT elements

The practice requires a national response and a demand from central government. For implementation it also requires:

- strong stakeholder networks and dissemination opportunities to encourage development applications;
- willingness of the career guidance industry/professionals to embrace ICT tools in their practice and develop end-user applications.

Future developments and trends

- expanding the LMI for all database with a range of other sources
- potential to be used for other services beyond helping people looking for careers guidance and advice
- technical experts will have to ensure that the database infrastructure can cope with these developments;
- take a more differentiated approach to stakeholder engagement to support increased up-take from schools, etc.
- replace estimates with real data collected through surveys.

2.3.7. **bib-wiki: Austria**

http://bibwiki.at

Brief presentation of bib-wiki

- geographic level: national
- founding year: 2009
- type of initiative: private (non-profit)
- is the initiative a single access point? No
- target groups: unemployed; employed looking for a career change; guidance counsellors
- providing organisation: non-profit organisation Association for Networking, Research and Knowledge Transfer for the Facilitation of Social Participation
- stakeholders involved and their role: civil society; other.
  An advisory group of 25 counsellors from regional stakeholder networks in adult education and counsellors working at schools, universities and public labour market service support the platform design and improvement; the Federal Ministry of Education funds the project.

Challenges addressed

- Knowledge exchange (among education professionals, guidance counsellors, etc.)
- Raise guidance awareness
- Improve guidance/employment services
- Provide low-threshold information on education guidance to disadvantaged adult populations

bib-wiki supports the systematic exchange of information among education, counsellors primarily working with adults independent of where and how these work. This covers many sorts of information principally relevant during the counselling process, including informal knowledge and experiences gained within day-to-day practice. In effect, bib-wiki provides a supra-institutional knowledge management platform in adult education counselling, enabling professional exchange across organisational boundaries.

Beyond this, selected online content is made available to the general public. Particular emphasis is given to reaching out to those population groups who are less likely to access available offerings for further education, such as migrants and socially at risk groups. Selected online content is made available to the public; the initiative pursues a low-threshold approach towards information access, targeting population groups who are less likely to access further education.

bib-wiki aims at providing concrete answers to a wider range of questions typically arising in the context of further education, using simple language and terminology typically used by a lay person rather than education experts.

Policy objectives

- career management skills
- access to lifelong guidance services
- assuring the quality of lifelong guidance provision
- ICT in lifelong guidance
- supporting people at risk and disadvantaged groups
- improving careers information
- guidance practitioner training and qualifications
- raising the skills and qualifications of adults

What is the role of LMI and how is it used in bib-wiki?

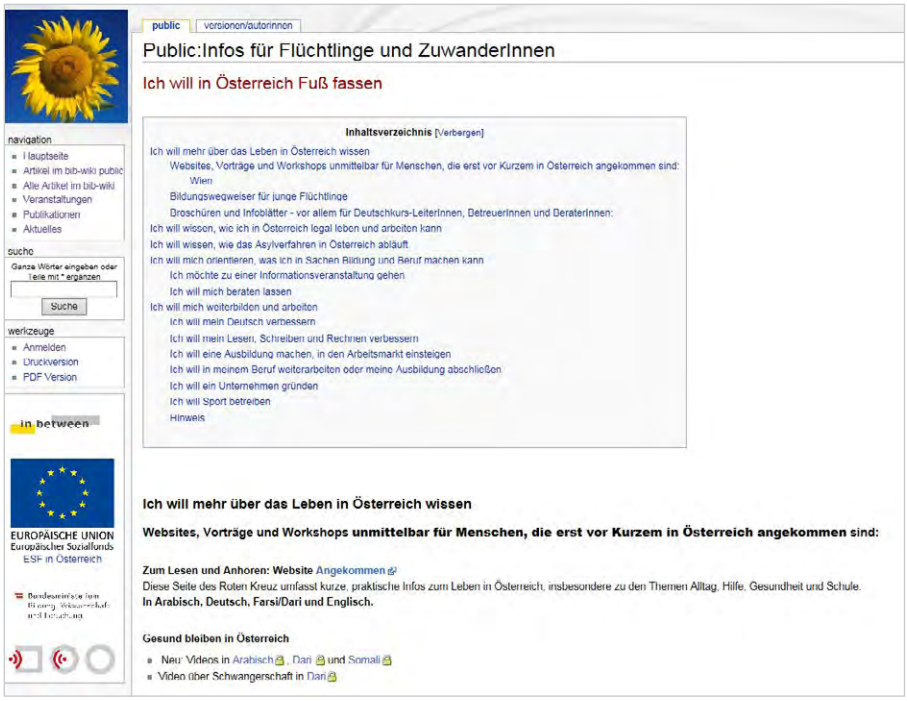
- Crowdsourcing of expert knowledge on education guidance
- Thematic compilation of third party LMI
- Personalised education advice
- Informal LMI

The platform relies on LMI crowdsourced from education counsellors who work in diverse institutional settings throughout the country. They are supported by a small editorial team which helps in gathering and editing suitable online content.

A diverse range of information is made available within a password-protected area of the online platform, accessible to education counsellors throughout the country following registration. All content is made available through online wiki articles generated by the bib-wiki expert users' community. Many contributions published by bib-wiki community members include hyperlinks to information and online tools available from external sources. These range from websites of organisations addressing particular target groups (refugees, people with disabilities or victims of domestic violence) to downloadable documents (literature) and retrievable databases and online tools maintained by third parties (such as the education database operated by Euroguidance Austria).

Selected information is made available in a publicly accessible area of the online platform. This part provides low-threshold information on opportunities for further education in short statements bringing information from the perspective of the user's needs and interests. More extensive information is linked to these statements, for example on how to improve own skills, obtain school-leaving qualifications, and find vocational training opportunities. Information is provided on how to deal with obstacles experienced when

taking advantage of education opportunities, such as caring responsibilities, psychological problems and financial liabilities.



What role does ICT play in bib-wiki?

- **Interactive online tools**
- **Online WIKI**
- **Connection with third parties (LMI, PES, etc.)**
- **Open source**
- **Combination with offline elements**

- On request, expert users are provided with a password-protected personal account and are enabled to add content or correct existing information online.
- Features for printing and forwarding articles are provided.
- Dedicated functionality for initiating online discussions is provided.
- Online features are available to professional counsellors across the country by means of an ordinary internet connection.

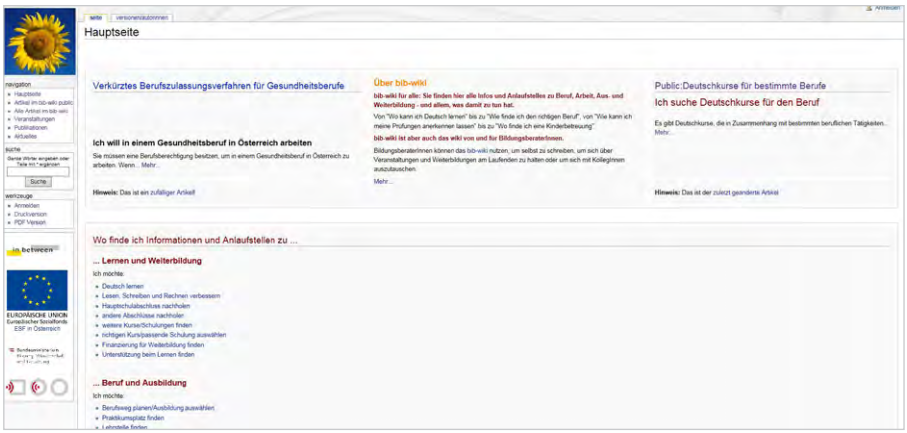
- Expert users regularly receive an email alert on content that has been added or updated. Care is taken that the expert users are not overloaded with information.

What results and impacts have been achieved by bib-wiki?

Quantitative results: About 500 counsellors are currently registered as expert users and the overall number of users, including the publicly accessible part of the platform, has increased to almost 2 000 per month.

Quantitative outcomes: Users seem to value the simple availability of information, also suggesting that the flexibility of the crowd-sourcing approach helps in quickly responding to newly emerging information requirements. The platform brings together a wealth of information in one place, interlinking many otherwise unconnected thirdparty information sources in a thematically driven manner. The networking approach supports mutual exchange among counsellors and knowledge transfer across organisations, contributing to improving the service quality in the domain more generally.

Evaluation process: Practitioners have been involved in the development of the platform from the beginning. A user survey was also conducted at an early stage. Regular qualitative feedback from users is comes from 'cafés', workshops and other events.



Success factors

- directly responds to the realities of a prevailing complex and scattered service landscape
- serves the needs of counsellors and professionals
- editorial team supports registered experts in generating content, while actively promoting opportunities for further education for the counsellors themselves
- involved a diverse range of practitioners in the development from the beginning
- conceptual approach adopted to structuring the information provided in the portal along the line of practical questions which typically arise in the context of education counselling
- complementary onsite networking measures in terms of local/regional 'cafés'
- endorsement by the Ministry of Education

Points of attention

- Time and capabilities required for contributing high quality content need to be properly estimated.
- Not all counsellors are familiar with the concept of an online wiki.
- Occasionally, institutions active in the field seem reluctant to allow staff to share knowledge across organisational boundaries.

TRANSFERABILITY ELEMENTS

Socioeconomic/-political context

The initiative was mainly triggered by the demand of counselling practitioners working within a rather scattered institutional provider landscape. Education counselling tends to be provided by different types of organisation and in a diverse range of organisational settings throughout the country. The approach to a provider-neutral knowledge management tool for education counsellors in terms of an online wiki was politically endorsed by the Federal Government through repeated project funding.

Financial requirements

No information available on the overall costs for development and maintenance. The personal resources of the editorial team are estimated to 0.5 full-time equivalents per year.

Human resources requirements

bib-wiki was developed and is maintained by a non-profit organisation; the management and editorial team comprises two employees. Onsite networking events are organised with voluntary support by expert community members. A dedicated advisory group of 25 members supports the initiative on a voluntary basis.

ICT elements

- online platform relying on commonly available open source wiki software (MediaWiki)
- accessible by the users through a publicly available URL in terms of a web service; no particular software components required locally

Non-ICT elements

- mutual exchange and further online engagement of registered expert users reinforced by locally/regionally organised on-site events and awareness raising
- the combination of offline and online engagement strengthens professional ties between bib-wiki expert users and is an incentive for contributing online

Future developments and trends

- relaunch of the existing online interface to increase the current level of usability and appeal
- connect the bib-wiki platform with the national portal on further education maintained under the auspices of the Federal Ministry of Education to aid use of content by more users and to improve findability by search engines

2.3.8. **Vi@s: Portugal**

https://vias.iefp.pt

Brief presentation of Vi@s

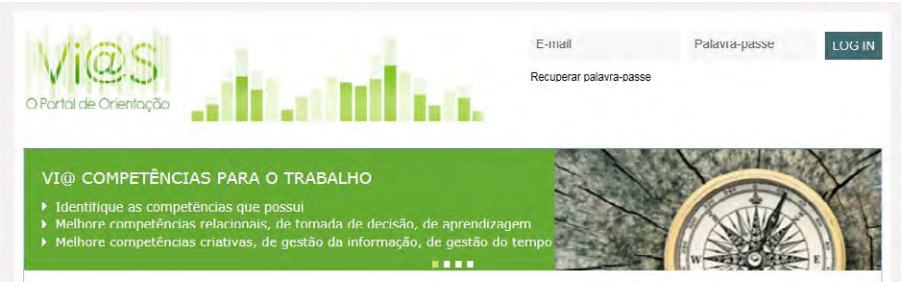
- geographic level: national
- founding year: 2012
- type of initiative: public
- is the initiative a single access point? Yes
- target groups: school students; higher education; college students; unemployed; employed looking for a career change; guidance counsellors; teachers; professors
- providing organisation: Institute of Employment and Training (IEFP)
- stakeholders involved and their role: government; businesses; academia; civil society.
  The Ministry of Education is involved in the portal design and configuration; employers and practitioners contribute to improving the services provided; IEFP makes appropriate corrections and adjustments based on end-user satisfaction surveys.

Challenges addressed

- Improve matching between skills and jobs
- Promote self-assessment
- Aid transition from school education to career selection
- Improve guidance/employment services
- Knowledge exchange (among education professionals, guidance counsellors, etc.)
- Raise guidance awareness
- Tackle unemployment

Vi@s supports the self-management of citizens' careers and guidance counsellor activities, to improve face-to-face interventions with the more disadvantaged unemployed jobseekers. Users can access four different Vi@s, that match the four thematic pathways with different types of information and activities:

- work competences: self-diagnosis of transferable skills required by employers and skill development by accessing online exercises and information;
- Vi@ exploration: self-knowledge and exploitation of occupations, active employment measures and education, training or job opportunities;
- Vi@ entrepreneurship: self-diagnosis of entrepreneur profile and potential development of entrepreneurial attitudes;
- Vi@ professional network: provides knowledge and acquisition of job-search techniques.



Policy objectives

- Career management skills
- Access to lifelong guidance services
- ICT in lifelong guidance

What is the role of LMI and how is it used in Vi@s?

- Occupation information
- Interoperability with job-search engines

Vi@s collects historic LMI on professions in Portugal, as used for producing various videos and other multimedia materials on various occupations; it also collects up-to-date information on job vacancies in Portugal.

Vi@s obtains data and information on the labour market from several sources:

- national statistics service;
- IEFP;
- local and regional LMI sources.

Policy objectives

- career management skills
- access to lifelong guidance services
- ICT in lifelong guidance

What role does ICT play in Vi@s?

- Combination with offline elements
- Interactive online tools
- Online wiki
- Connection with third parties (LMI, PES, etc.)
- Personalised information storage
- Social media utilisation
- e-portfolio

Vi@s offers various interactive tools through its Multimedia Centre, such as online guidance programmes, vocational games, electronic publications and videos.

My Portfolio section allows users to store their CVs and other certificates, which can be communicated via email.

Vi@s obtains data and information on the labour market from several sources.

What results and impacts have been achieved by Vi@s?

Quantitative results: The number of visits in 2016 was 25 994, while the total number of registrations since May 2012 is 46 532.

Qualitative outcomes: The design of the portal is evaluated as easy to use: most respondents stated that Vi@s assisted them to comprehend better their professional and academic options and assess their skills.

Evaluation process: From a user perspective, through satisfaction surveys as well as monitoring of the records and of the number of accesses to the

portal, per user profile; from a management perspective, through qualitative assessment of the portal impact on the management of public employment service resources, performed by managers. Informal feedback is collected from employers and practitioners on the content and usability of the portal.

Success factors

- response to a real labour market need in Portugal at the time of its conception
- suitability to different user needs for information and guidance
- high levels of digital literacy among Portuguese citizens
- political support received
- connection with the national statistics service for the provision of LMI
- hosting under IEFP

Points of attention

- poor dissemination of the portal
- fear that third parties may have access to some personal information
- weak computer knowledge of guidance professionals

TRANSFERABILITY ELEMENTS

Socioeconomic/-political context

IEFP participation in the ELGPN Network, and user need for interaction with the public and private services using ICT, inspired the institute to develop this national online guidance service. Vi@s online service was launched in 2012, when Portugal was facing the impacts of the financial crisis on its employment situation.

Financial requirements

The costs for the overall development of the application that supports Vi@s portal are estimated around EUR 57 195.

Human resources requirements

Of the total 3 268 IEFP staff, around 278 people (8.5%) were guidance professionals in 2016, allocated to employment centres or training centres.

ICT elements

- The portal comprises multimedia elements, which contains documents, podcasts on employment, exploratory games, videos, etc.
- All stored documents can be sent by email.
- The initiative does not require advanced literacy on information technology.

Non-ICT elements

- Further personal, face-to-face counselling is needed afterwards;
- Stakeholders such as the Ministry of Education, employers, practitioners, and end-users contribute to the portal design and configuration and to improving the services provided.

Future developments and trends

- improve and update the portal through its integration within the new IEFP information technology system
- improve the IEFP information system, to integrate it within the PES
- develop the skills system

2.4. ICT and LMI cases of the fourth domain cluster

General thrust	Short Title	Country
Improving transnational guidance	EURES	EU
	Europass	EU

2.4.1. **EURES: EU**

https://ec.europa.eu/eures

EURES
The European Job Mobility Portal

Brief presentation of EURES

- geographic level: EU
- founding year: 1993
- type of initiative: public
- is the initiative a single access point? No
- target groups: job seekers; employers; universities; training institutions; PES staff
- providing organisation: EURES
- stakeholders involved and their role: government; businesses; civil society. Stakeholders have an active role in the operation and update of information available via EURES.

Challenges addressed

- Improve matching between skills and jobs
- Improve guidance/employment services
- Raise guidance awareness
- Tackle unemployment

EURES provides information, advice and recruitment/placement (job matching) services for workers, employers and any citizen wishing to benefit from the EU principle of free movement.

It provides support through EURES advisers; the EURES cross-border partnerships; the European job days, and the EURES job mobility portal, composed of three sections: database of job vacancies; provision of information related to living and working conditions in European countries,

where users can gather LMI in both national and regional level; a section for employers to register and search for candidates.

Policy objectives

- career management skills
- access to lifelong guidance services
- strategic leadership
- improving careers information

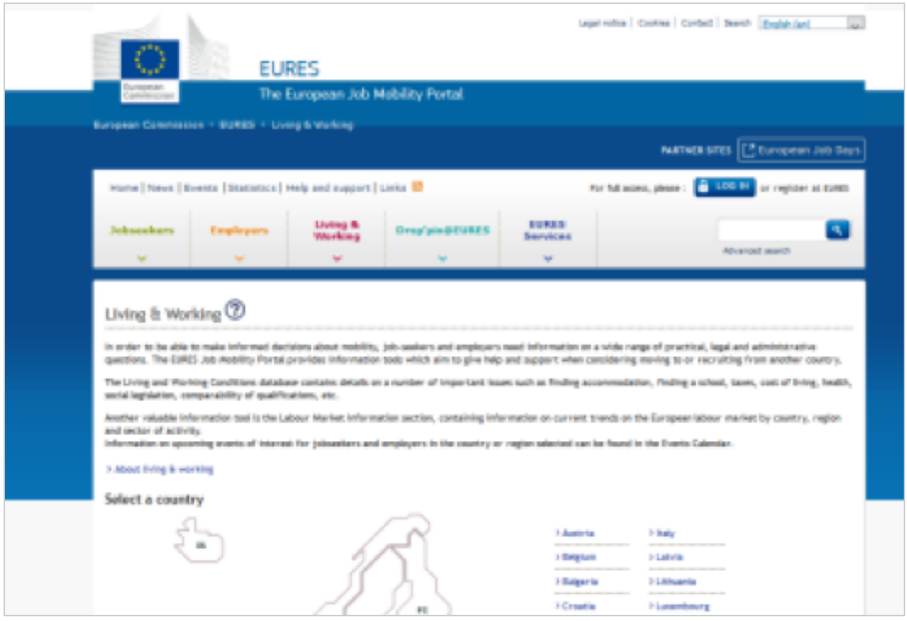
What is the role of LMI and how is it used in EURES?

- Occupation information
- Effective job matching

EURES posts LMI from different sources such as country official websites, public administration portals, government agencies, labour offices, etc. All information on labour market trends and living and working conditions are updated regularly by EURES national correspondents. The information comes directly from Member States and no regular or official update is foreseen.

Aspects of LMI:

- overview of LMI across all EU Member States;
- database of registered vacancies, with sectoral information included;
- database of candidates, including locations with most jobseekers and occupations with most available candidates;
- statistics on the Top 10 most preferred occupations in a country or a region;
- information on cross-border employment, via respective partnerships.

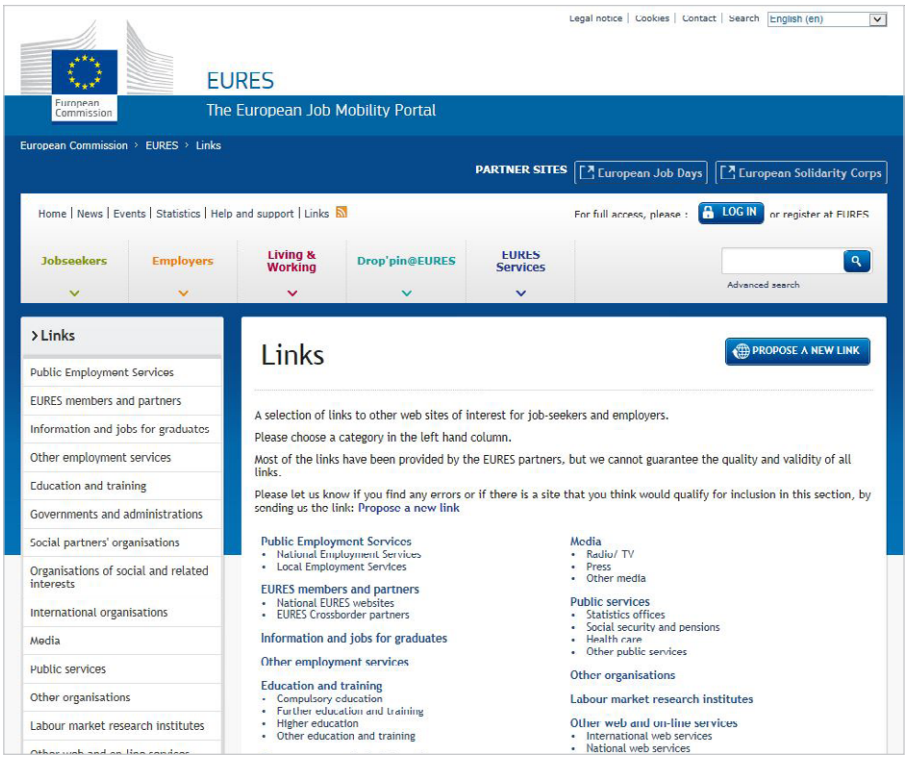


What role does ICT play in EURES?

- Interactive online tools
- Mobile application
- Online wiki
- Connection with third parties (LMI, PES, etc.)
- Personalised information storage
- Social media utilisation
- Online counselling
- Open source
- e-portfolio

ICT is a critical element of EURES:

- an automatic vacancy count is performed every 30 minutes;
- jobseekers can perform searches in different languages;
- each EURES Member State inserts its data by using open source web services technology;
- some data are directly inserted from country official websites, public administration portals, government agencies or ministries.



What results and impacts have been achieved by EURES?

Quantitative results:

- 850 000 people visit the portal every month;
- by March 2015, 146 450 CVs were available;
- a total of 2 508 companies have searched for employees through the EURES portal.

Qualitative outcomes: EURES has improved the quality of respective services; contributed to lasting changes; built awareness of mobility over the period under review; and improved balance between supply and demand of labour in the EU.

Evaluation process: Questionnaires and surveys.

Success factors

- budget appropriate to improving efficiency and supporting an increase in EURES personnel
- financing training sessions and seminars for new or experienced EURES personnel
- strong commitment and high qualifications of EURES key personnel
- targeted mobility initiatives and joint activities among advisers' network
- cooperation with other European networks
- productive cooperation between public employment services

Points of attention

- no regular updating of information
- limited matching capacity
- lack of harmonisation of social security and taxation systems
- limited monitoring and evaluation of EURES activities

TRANSFERABILITY ELEMENTS

Socioeconomic/-political context

What triggered the development of EURES in 1993 was the need for worker mobility from high unemployment areas to those characterised by labour shortages across the EU. The difficulty of companies and countries in finding staff with the right skills for vacant positions and overcoming mismatches in the labour market accelerated the development of EURES services. Limited intra-EU labour mobility and the need to strengthen the integration of Member State public employment services to reach those goals has promoted EURES as a response.

Financial requirements

Around EUR 15 million, of which: 33% (EUR 5.2 million) are used for making information transparent for potential applicants and employers, and 67% (EUR 10.6 million) are invested in EaSI ([5]) supported services to ensure jobseeker successful integration in the labour market.

Human resources requirements

The network consists of around 1 500 EURES staff, 90% of which work for PES.

Each regional EURES office has one ICT person. Depending on the country, EURES staff is organised in different ways.

ICT elements

- National public employment services have complete control over their own data.
- An automatic vacancy count is performed every 30 minutes.
- Jobseekers can perform searches in different languages.

Non-ICT elements

Involving stakeholders in EURES processes is vital to EURES success: stakeholders help in identifying skill gaps and qualified workforce but also ensure adequate matching and recruitment.

Future developments and trends

- A more coherent application of clearance, support services and exchange of information on labour mobility within the EU is needed. The EURES network is being re-established and reorganised.
- The European Commission and the Member States will broaden the EURES network as the main EU tool for delivering recruitment services.
- The European coordination office will provide common information, tools and guidance, training activities developed together with Member States, and a helpdesk function.
- A coordination group is being established to exercise a coordinating role.
- Introduction of a new extranet enabling learning, cooperation and connection within the EURES network.

([5]) EU programme for employment and social innovation. http://ec.europa.eu/social/main.jsp?catId=1081

2.4.2. **Europass: EU**

http://europass.cedefop.europa.eu

Brief presentation of Europass

- geographic level: EU
- founding year: 1998
- type of initiative: public
- is the initiative a single access point? No
- target groups: school students; higher education; college students; unemployed; employed looking for a career change; teachers; professors; employers
- providing organisation: Cedefop together with the European Commission directorate-general Employment and the national contact points
- stakeholders involved and their role: government; businesses; academia; civil society; EURES; national validation centres.
  All stakeholders actively contribute to the promotion and management of Europass documents.

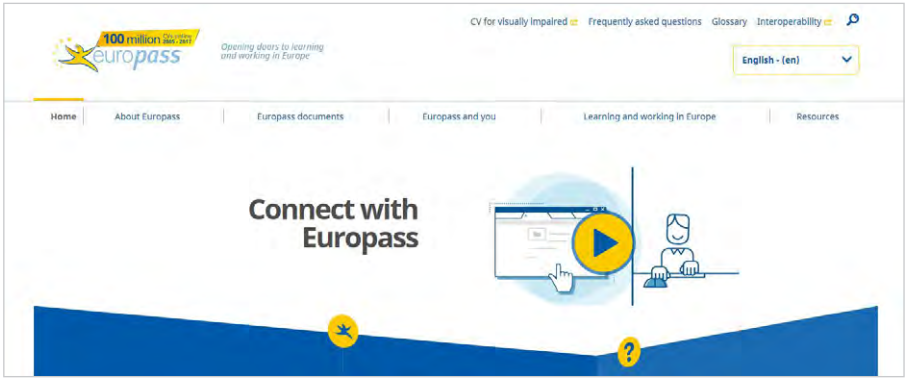
Challenges addressed

- Promote self-assessment
- Tackle unemployment
- Other: increase the mobility of people in Europe for education and employment purposes

Europass consists of the following five elements:

- the Europass curriculum vitae (completed by the individual for qualifications, professional experience, skills and competences);
- the Europass language passport (completed by the individual for language skills);
- the Europass certificate supplement (issued by the authorities that award vocational education and training certificates, to add further information, make them more comprehensible to employers and institutions outside the issuing country);
- the Europass diploma supplement (issued by higher education institutions along with graduates' degrees or diplomas, to make them more comprehensible outside the country awarded;

- the Europass mobility document (records all organised period of time that a person spends in another European country for the purpose of learning or training).



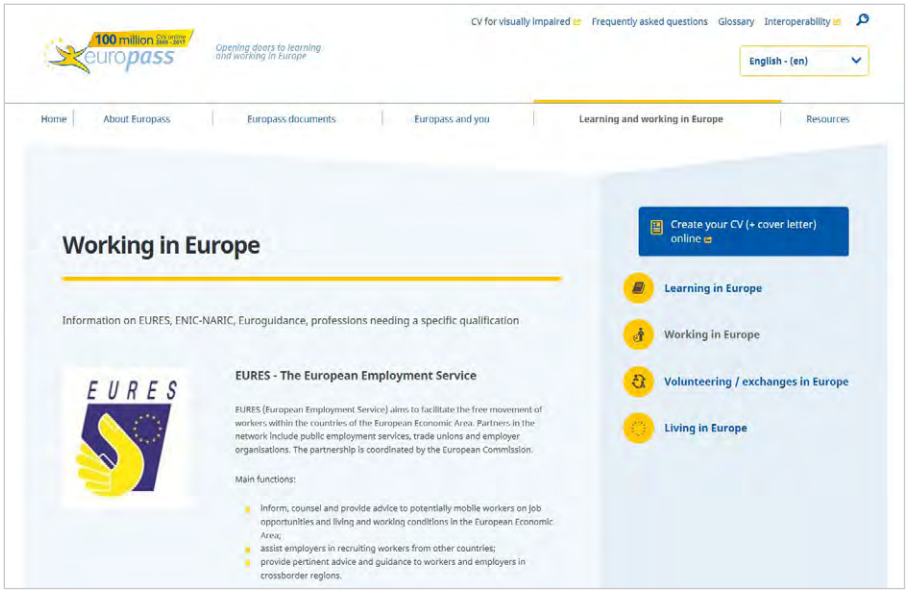
Policy objectives

- career management skills
- improving careers information
- ICT in lifelong guidance
- raising the skills and qualifications of young people
- raising the skills and qualifications of adults
- improving employability and supporting older workers
- supporting people at risk and disadvantaged groups
- other: contributing to mobility of people in Europe for education and employment purposes

What is the role of LMI and how is it used in Europass?

- **Innovative user profiling**
- **Provision of additional information on the awards not available elsewhere, to make it easily understood to employers and institutions in other countries**
- **Provision of external links to available EU employment, guidance and education services**

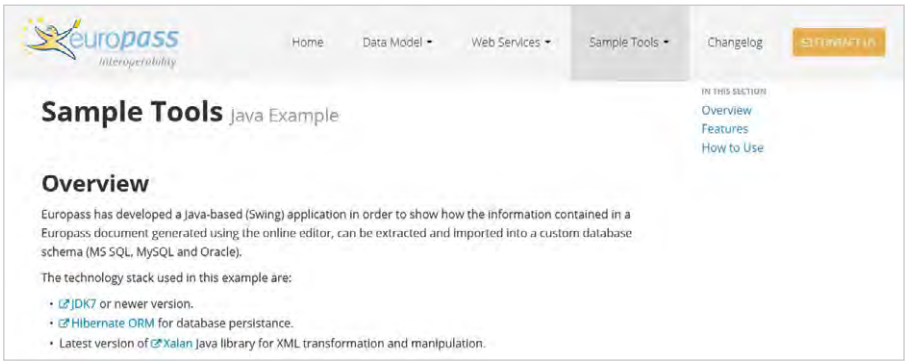
- the 'Working in Europe' section provides external links to available EU employment, guidance and education services
- the interoperability section links Europass with any organisation that maintains a CV database or manages personal data.



What role does ICT play in Europass?

- **Combination with offline elements**
- **Interactive online tools**
- **Connection with third parties (LMI, PES, etc.)**
- **Personalised information storage**
- **Open source**
- **e-portfolio**

- The portal works with open source solid standards and is operable in HTML and XML.
- The interoperable aspects of Europass are defined in XML and JSON format.
- An XML vocabulary uses an XML schema to describe the information contained in the curriculum vitae (CV), language passport and European skills passport.
- Individuals who use the Europass online editors to create a CV, a language passport or a European skills passport can save it in Europass XML format or PDF format with the XML attached. Both formats can be imported to the Europass online editors at a later stage for editing, or to any other system that understands the Europass XML.

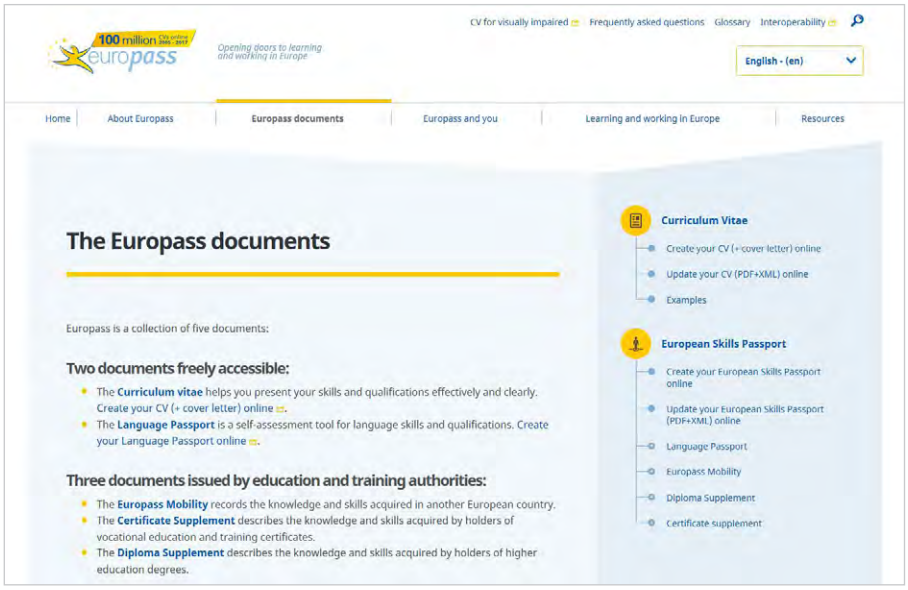


What results and impacts have been achieved by Europass?

Quantitative results: Total number of visits since launch in 2005 is estimated at almost 140 million. Europass users tend to be young, female and highly educated.

Qualitative outcomes: The most important European added value was the creation of a set of international, recognised and uniform documents for recording qualifications, skills and experiences. An effective support system and a well-developed brand image led to international recognition of the documents, which was the key reason why they are chosen by end-users.

Evaluation process: Every four years, the European Commission should submit to the Parliament and the Council an evaluation report on Europass. Also, the portal collects statistical data on usage each monthly; direct feedback – primarily on technical issues – is obtained via email.



Success factors

- cooperation with similar European initiatives (e.g. Euroguidance)
- pooling many resources in its dissemination
- joint efforts in keeping Europass up to date with the needs of various stakeholders through engagement strategies
- availability of Europass as a free tool
- direct involvement of National Europass Centres (NECs)
- official requirement to use Europass documents across EU Member States

Points of attention

- lack of general public awareness
- layout, content and design
- lack of a single document for describing and recording learning achievements and skills acquired in non-formal and informal settings
- keeping up to date with technological developments and making the platform more user-friendly

TRANSFERABILITY ELEMENTS

Socioeconomic/-political context

When Europass was initiated in 1991, mobility of students and employees around Europe was around 3-4% due to reasons such as language barriers, lack of recognition of formal education and skills across Europe, absence of legislation to support mobility, etc. In 1998, the European Forum on Transparency of Vocational Qualifications concluded with the development of the Europass, as well as a network of national reference points for vocational qualifications.

Financial requirements

An annual sum of approximately EUR 2 million is assigned to the initiative.

Human resources requirements

Cedefop is responsible for the overall operation and maintenance of the Europass website: design and elaboration of the different templates uploaded on the website and the quality control of Europass different aspects.

Cedefop is supported technically by external ICT organisations: for example in the development of additional, new modules; the provision of on-site services, etc.

ICT elements

Europass interoperability is based on a common vocabulary that leverages the benefits of web services and public APIs.

Non-ICT elements

Stakeholder contribution to promotion and management of Europass documents.

Future developments and trends

The most important trend for the future course of Europass is interoperability. From an LMI perspective, Europass aims to explore the ways to improve the job matching aspects of the documents, to provide data mining, and to accomplish skills intelligence.

CHAPTER 3.

The decision-making tool

The key process context factors that outline the transferability of the 25 ICT and LMI practices have been identified using the extrapolation protocol (Ongaro, 2009). This analysis has been made in the frame of the full case studies development process as well as through the analysis of the 25 ICT and LMI practices (see Chapter 2).

These key process context factors have been summarised in three main constructs: relevance, context and applicability. Specific factors/criteria and respective questions have been identified within these constructs. The identified constructs, criteria and questions have fuelled the development of the decision-making tool for future transferability assessment (adapted from Buffet et al., 2011).

In sum, the tool offers a practical framework for assessing the transferability potential of an ICT and LMI practice to a target setting. This is achieved by helping the potential users of the tool to reflect on the following three types of transferability assessment constructs and respective factors/criteria.

- relevance: the factors/criteria and questions of the relevance construct aim at assessing whether the practice can achieve similar results at the targeted geographic level (local/regional/national) and setting (goal/objective versus need). Assessment criteria for the relevance construct include factors such as the existence of the lifelong guidance objectives in the target context, the magnitude of the lifelong guidance challenges in the target geographic level and setting, the comparability of the target populations, the geographic relevance and the scalability potential of the practice;
- contextual: the factors/criteria and questions of the contextual construct aim to assess the higher-level implementation parameters of the practice in a target setting (i.e. contextualising factors). In doing so, this construct takes into account factors such as political and social acceptability in the target context, the availability of organisations with the expertise and capacity to implement the practice, the level of engagement and potential support of the lifelong guidance stakeholders;
- applicability: the factors/criteria and questions of the applicability construct aim at determining whether it is possible to implement the ICT and LMI

practice at the target geographic level (local/regional/national). Criteria for assessing feasibility include aspects such as the information technology capacity to implement the required ICT tools, the availability of required LMI, the existence of a supportive legal framework, the existence of legal prerequisites and barriers, the availability of resources (i.e. human, financial, technological).

The goal of the decision-making tool is not to channel its users towards specific practices or to offer a full evaluating framework of ICT and LMI practices. Instead, it aims to function as a thought-provoking tool with the potential to assist its users to reflect on the key aspects of an ICT and LMI practice and how these correspond to the needs, norms and capacity of the target context. As such, its overall goal is to present the key transferability assessment factors/criteria (i.e. relevance, contextual, applicability) and to consider a broad range of respective questions that need to be asked prior to the actual adoption of an ICT and LMI practice that has been developed and implemented in a different context.

3.1. Guidelines for the application of the decision-making tool

The decision-making tool aims to assist lifelong guidance decision-makers and managers of relevant organisations when selecting ICT and LMI tools that have been successfully applied in other contexts. However, for the tool to be used, the implementing authorities must have already completed the following steps:

(a) define the lifelong guidance challenges and objectives to be addressed;
(b) go through the inventory of ICT and LMI practices as well as through the respective summary descriptions to identify the most relevant practices to be considered;
(c) identify additional relevant ICT and LMI practices and tools.

These steps are necessary prior to implementation of the tool to assist decision-makers and managers in deciding whether to adopt and introduce the identified ICT and LMI practices into their own contexts.

Once the relevant ICT and LMI practices have been identified, the decision-making tool can be applied. Six steps have to be followed.

(a) Step 1: define the people who will be involved in working with the decision-making tool.
All the following steps require the cooperation of this group of people.
It is recommended this step ensures the participation of all stakeholder groups that are relevant to the potential development and implementation of the ICT and LMI practice, and hold valuable insights into the relevance, contextual and applicability factors in the target context.
At this point, participation of the actual potential users of the ICT and LMI practice (e.g. students, guidance practitioners, school teachers, etc.) is also imperative, since this group will provide important acceptability insights. Participation of experts from various levels of the local/regional/national lifelong guidance context should also be sought, since this will improve assessment, while at the same time offer feedback from the standpoint of the local/regional/national lifelong guidance setting.

(b) Step 2: selection of the most relevant transferability factors/criteria (i.e. relevance, contextual, applicability).
Since not all factors/criteria are relevant for every case, the people who participate in implementing the tool should choose the transferability factors/criteria and respective questions that are important for their case. These factors have to be selected for the specific practice(s) under consideration as well as for the local/regional/national target context (such as political environment, organisational structure, and target population features). A consensus should be reached among stakeholders on the final shortlisted factors/criteria.
Although recommended use of the tool requires assessment of a mixture of relevance, contextual and applicability factors and questions, the decision-making tool can also be applied for assessing these three constructs separately.

(c) Step 3: establishing the priority of each factor/criterion – allocation of weights.
At this point, it should be defined whether the previous factors/criteria are equally important. Since, a set of factors/criteria usually have different priority during an evaluation process, these factors can also be given different weighting according to their level of impact.
This process has to be unique for every case and its outcome should be derived after internal discussions and in consultation with the group of stakeholders involved in using the decision-making tool. This adaptation to each case is necessary since the users of the decision-making tool

are those who will hold the information required to prioritise the selected factors/criteria at a particular time period and for a specific target context.

(d) Step 4: define how the different weightings will be allocated among the various factors/criteria.
Various methods can be used for setting the weighting of the various selected criteria. Except for quantitative techniques such as the *Analytical hierarchy process* (Saaty, 1980), the use of average scores and the allocation of simple numeric values, qualitative ratings can also be assigned to the selected criteria which will then correspond to a specific numeric value for the needs of the assessment (low priority = 1; medium priority = 2; high priority = 3). These methodologies are not analysed here since in-depth review goes beyond the scope of this study.
However, the final prioritisation and allocation of weightings to the selected assessment factors/criteria, will be based on the expert knowledge and context-based experience of participating stakeholders.

(e) Step 5: select a scoring system for the assessment factors/criteria.
Users of the tool should define a scoring system to suit their context. An easy and common way to address this step is the individual ratings of each factor/criterion on a 1 to 5 Likert scale. The higher the final score, the more transferable a practice will be to the target context. Where several practices are under consideration, the priority will have to go to the practice that achieved the highest score.
The users can also establish a threshold for the overall scoring or even for individual assessment constructs and respective factors/criteria.

(f) Step 6: use the summary descriptions as well as the full case studies of the 25 ICT and LMI practices.
To define the response of their context to the selected relevance, contextual and applicability assessment factors/criteria, the users of the decision-making tool should reflect upon the summary descriptions of the ICT and LMI case study practices presented in Chapter 2, as well as in the full versions of the respective case studies.

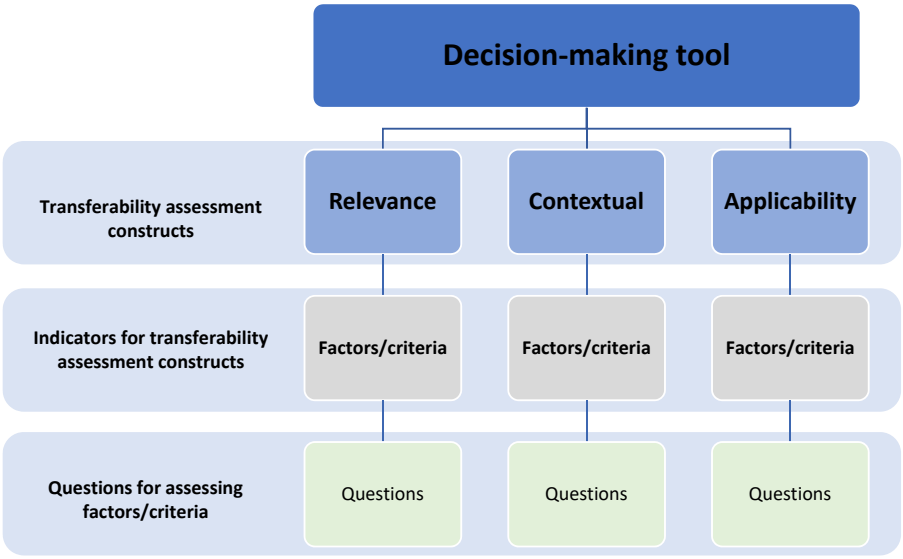
3.2. The decision-making tool

The decision-making tool for future transferability assessment of ICT and LMI practices (adapted from Buffet et al., 2011), is a practical framework that is designed in three levels:

(a) the constructs;
(b) the factors/criteria;
(c) the questions.

Figure 1 illustrates how the decision-making tool is designed and developed.

Figure 1. **The three levels of the DMT**



The transferability assessment constructs include the most important identified aspects that affect and largely define the transferability potential of a practice. Overall, the decision-making tool suggests that the transferability of ICT and LMI practices should be viewed and assessed against the relevance, contextual, and applicability aspects of a practice when this is considered in the target context. The relevance construct of the decision-making tool aims to assess the possibility that an ICT and LMI practice can be generalised and achieve similar results when applied in the target context. The contextual construct targets the high-level implementation parameters in the new setting, since it aims to define whether the key enabling environment and factors for the successful transfer of the practice are in place. The applicability construct aims to assess the capacity of the target context as well as of the implementing organisation to apply the ICT and LMI practice in a proper way.

Several factors/criteria have been identified and connected to each of these transferability constructs. It is suggested that these factors/criteria are to be used as indicators for the assessment of the constructs since they refer to several important features of the ICT and LMI practices, including both their salient aspects as well as more specific elements such as environmental and institutional factors (such as local/regional/national policy framework, stakeholders, resources). These factors/criteria are meant to assist the users of the decision-making tool in comparing the original and target contexts and identifying mismatches and similarities.

The decision-making tool also provides its users with several transferability assessment questions that fall under each factor/criterion. These questions are to be asked by the users of the decision-making tool when trying to assess the respective factors/criteria.

Table 3, outlines all the above aspects of the decision-making tool. The 'weight' column is provided for the users of the tool and it offers space where they can state the weights they will allocate to each factor/criterion after following steps 3 and 4 described in Section 3.1.

Table 3. **The decision-making tool**

Construct	Factors/ criteria	Questions	Weight
Relevance			
Answers to the following questions: Can the results be generalised? Can we expect the same results?	Objective(s) of the practice	Is the practice targeting the same lifelong guidance priority objective(s) in the donor and in the target context? (e.g. improving employability, career management skills, supporting people at risk and disadvantaged groups, raising the skills and qualifications of young people)	

Construct	Factors/ criteria	Questions	Weight
Answers to the following questions: Can the results be generalised? Can we expect the same results?	Magnitude of the lifelong guidance challenge(s) addressed in the target context	Does the same need(s) exist? Do these lifelong guidance challenges exist in our setting? (e.g. target unemployment, facilitate knowledge exchange among practitioners, transition from school education to career selection) Does the practice function as a one-stop-shop that addresses multiple lifelong guidance challenges? Are there any similar initiatives that already address these lifelong guidance challenges in our context? What is the baseline prevalence of the lifelong guidance challenges in our context? How many people in our context are affected by these challenges? How does the above compare with the prevalence of the lifelong guidance challenges described in the donor situation? Are the problems caused by these lifelong guidance challenges as large as in the donor context? What is the difference between the two contexts?	
	Magnitude of the potential reach of the practice	Did the practice help the organisation in the donor context to achieve its objectives and strategic plan? Can we reach a large proportion of our target user groups by using this practice? What will be the coverage rate for our main target groups? Can this practice lead to increased usage rates by our current users/customers? Will this practice help our organisation to improve its services, processes and technological competences and to attract new user groups? Does the practice have the potential to lead to higher user satisfaction rates? Will the practice lead to an increased number of users/increased sales? Is the practice inclusive in addressing the needs of various target groups?	
	Comparability of target groups	Do we target the same groups as in the original? (e.g. school students, unemployed, adult education, career guidance practitioners, immigrants) Is our target population comparable to the population of the original context? Are there any differences in characteristics that could affect the effectiveness of the practice in the local setting? For instance: · cultural factors (lifestyle, beliefs, preferences, behavioural factors); · factors depending on their age, language, ICT literacy, education background; · ethnicity, socioeconomic, demographic factors.	

Construct	Factors/ criteria	Questions	Weight
Answers to the following questions: Can the results be generalised? Can we expect the same results?	Geographic relevance	Does the practice fit our geographic focus? Is the practice scalable? Has it successfully been scaled from local to regional or national level?	
Contextual			
Answers to the following questions: Is the context of the target setting appropriate for the uptake of the practice? How does the practice relate to the key enabling environment in the target context?	Political acceptability	Does the objective of the measure match with political priorities of our context? (e.g. alignment with local/regional/national lifelong guidance policies or growth strategies, policies promoting ICT and LMI tools) Does it conform to existing local/regional/ national regulations and policies? Does it have contradicting effects? (e.g. lifelong guidance regulations, data privacy regulations) Is the practice in line with the national curricula and lifelong guidance framework of the target context? It is in line with the ELGPN guidelines? What are the government's indicators for success of practices that correspond to its lifelong guidance priorities? Has the practice yielded similar results in the donor context? Is the socioeconomic context that has led to the development of the practice similar to this of the target context?	

Construct	Factors/ criteria	Questions	Weight
Answers to the following questions: Is the context of the target setting appropriate for the uptake of the practice? How does the practice relate to the key enabling environment in the target context?	Social acceptability	Will the target population be interested in the practice? Do our target groups demonstrate the needs/ challenges addressed by the practice? Are the aspects of the practice in line with the local/regional/national norms? Does the practice follow a needs-driven/user-centred design approach? Is the practice inclusive in addressing the needs of various target groups? (e.g. one-stop-shop approach, single access point) Is the LMI that is provided by the practice innovative? (e.g. real-time LMI, interoperability with other ICT practices, crowdsourcing of expert knowledge) Does the practice use innovative ICT methods that can be attractive to users? (e.g. interactive online tools, social media usage, multimedia) Is the practice easy to use by the target groups? Does it require training? Is its design user-friendly? Can it be used without the assistance of a guidance practitioner? Can it be used by people with low digital skills? Does the practice ensure personal data privacy?	
	Support of the lifelong guidance system stakeholder	Can we achieve the necessary lifelong guidance stakeholder cooperation, support and role as in the donor context? (e.g. education agencies, employment offices, guidance practitioners, business community, citizens, local authorities) Can the local/regional/national lifelong guidance stakeholders be engaged in the development and delivery of the practice in our context? (e.g. provision of the practice, LMI provision)	
	Impact on other affected interest groups/ stakeholders (since this is a negative statement, the lower existence of such impacts is, the higher the score of this factor should be)	Does the practice contradict the interests of any important stakeholders of the local/regional/ national lifelong guidance system? (e.g. national employment agencies, national agencies for various levels of education)	

Construct	Factors/ criteria	Questions	Weight
Answers to the following questions: Is the context of the target setting appropriate for the uptake of the practice? How does the practice relate to the key enabling environment in the target context?	Institutional capacity and compatibility	Which organisation will be responsible for the provision of the practice in the local setting? Is the practice consistent with the mission and ideology of our organisation? Is the practice in line with the current strategic plan of the organisation? Does the organisation have a strategy for the promotion of ICT and LMI tools? Is the practice reciprocal to existing practices of the organisation? Does it overlap or contradict with existing practices? Can we support/achieve the same organisational structures, necessary for the implementation of the practice? Is the implementing organisation motivated to learn and open-minded to new practices? Are there any possible barriers due to the structure of the organisation that will implement the practice in the local/regional/national context?	
Applicability			
Answers to the following questions: Can the practice be implemented in the local/ regional/national context? Is the capacity to implement the intervention comparable? Can it work for us?	Existence of supporting legal and regulatory framework	Is the practice, in the donor context, attached to any specific lifelong guidance legislative framework? Is it the outcome of, or directly connected to, a local/regional/national lifelong guidance policy? Is the practice compulsory by law or voluntarily used in the donor's context? How is it going to be offered in our context? Is the necessary legislative context in place in our own setting? (e.g. policies integrating ICT tools and LMI in lifelong guidance interventions) Is the practice a result of a local/regional/national/ European initiative? Do similar political initiatives exist in the target context?	

Construct	Factors/ criteria	Questions	Weight
Answers to the following questions: Can the practice be implemented in the local/ regional/national context? Is the capacity to implement the intervention comparable? Can it work for us?	Existence of legal prerequisites for the replication of the practice (since this is a negative statement, the lower the existence of such prerequisites is, the higher the score of this factor should be)	Do other organisations or countries restrict the use of the practice? Is the practice owned by a private organisation? Are there any intellectual property rights, copyright, private data restrictions that affect the implementation of the practice in our context? Does the donor organisation support an open data policy which is not applicable to our context?	
	Role and availability of required LMI aspects	Does the utilisation of the LMI by the practice serve the lifelong guidance needs and priorities of our local/regional/national context as well as those of the organisation that will implement the practice? (e.g. effective job matching, personalised education advice, occupation information) Do we have experience in offering similar LMI? Is the LMI that is required for the development and implementation of the practice already available in our context? Are the processes and cooperation with internal and external actors required for the development of the LMI, easily replicable in our context? (processes and cooperation for the LMI gathering, validation, reliability, update) Does our organisation have already established connections with the required LMI sources and stakeholders? Do stakeholders who hold important LMI in our context, follow an open data policy? Does the required LMI fall under any specific data privacy regulations?	

Construct	Factors/ criteria	Questions	Weight
Answers to the following questions: Can the practice be implemented in the local/ regional/national context? Is the capacity to implement the intervention comparable? Can it work for us?	Role and ease of use of required ICT aspects	Does the organisation that will implement the practice have experience in utilising similar ICT tools and processes for the provision of LMI? (e.g. online guidance, online wiki, interactive tools) Does the practice require any complex technological infrastructure? Does the practice require any technological aspects protected by copyright regulations? Is the practice built on open source software that is freely available?	
	Availability of resources necessary to deliver the practice	Which organisation will be responsible for developing and offering the practice in our context? Does the organisation have the administrative and enforcement capacity to deliver the practice in our context? Are the human resources adequate for the initial development and the routine application of the practice? Are our human resources adequately trained in aspects that revolve around the required LMI and ICT usage? If not, is their training feasible? Is the practice based on any guidance model or theoretical approach, in which our human resources have experience? Are the financial resources adequate for the initial development and the routine application of the practice? (considering staffing requirements, technology required, training, administrative support, promotional actions) Is the technological infrastructure required for the development and application of the practice available? If not, is it easy to acquire such infrastructure in terms of time and costs?	
	Adaptability of the practice	Will our target groups accept the practice in its current format? Is the language of the practice appropriate for our target audiences? Does it have to be translated? Is the practice adaptable to the reality of our context? Is the practice adaptable to the characteristics of our target groups? Can we adopt only certain features of the practice?	

Construct	Factors/ criteria	Questions	Weight
Answers to the following questions: Can the practice be implemented in the local/ regional/national context? Is the capacity to implement the intervention comparable? Can it work for us?	Existence of other barriers and implementation risks (since this is a negative statement, the lower existence of such barriers is, the higher the score of this factor should be)	Other local barriers and implementation risks such as: · potential resistance to change from the target users and the lifelong guidance stakeholders; · lack of provisions for people with inadequate digital skills; · inability to apply the mitigation strategies that were used in the donor context regarding possible obstacles for the development and application of the practice; · political volatility in the local/regional/national context; · other.	

CHAPTER 4.

Policy-level conclusions

This handbook was created in the context of a wider study funded and guided by Cedefop (Developing information technologies and labour market information in lifelong guidance; AO/DLE/PMDFON/ICT_and_LMI_in_Guidance/010/15). The study aims to promote knowledge-building and exchange on information and communication technologies (ICT) and labour market information (LMI) usage between managers and practitioners in the field of career guidance and counselling across Europe. During the fieldwork research and the synthesis process that followed, several interesting conclusions were drawn, some of which are presented here.

Reaping the benefits of ICT-based innovation in career guidance usually requires a comprehensive innovation strategy, encompassing technology innovation and process innovation at the same time. Although the positive potentials generally provided by ICT solutions for career guidance delivery are frequently alluded to in the literature, the evidence base on impacts achieved by ICT-based innovation in this field has remained largely underdeveloped up to now ([6]). Against this background, a challenge for policy-making is to separate the 'hype' from the reality. On the surface, at least, many innovations in this field appear 'self-evidently' to have a high utility value for generally meeting the needs of those seeking guidance and those providing relevant services. This can sometimes lead to a tendency to see the problem as one of spreading the message that deploying ICT-based tools and services will bring take-off. The reality is more complex: even in cases where there has long been awareness of what ICTs can offer, full embedding and mainstreaming of current ICT-based solutions often required consistent effort over years. The evidence available from the 25 case studies suggests that different aspects deserve attention in this context.

A high level of cooperation with stakeholders is crucial to initiative success. The cases that aimed at the support of all primary (stakeholders,

([6]) The literature review conducted in the framework of this study has, for instance, revealed that robust evaluation data on impacts of ICT-based service delivery in career guidance is seldom found.

and managed to engage them from the conception and design of a tool, achieved proper design and promotion of the use of the initiative, not only among end-users but also intermediaries such as. guidance counsellors and school teachers.

A detailed understanding of the current service processes, priorities and future direction of all stakeholders to be involved in guidance delivery should be obtained prior to decision-making on introducing new ICT. Depending on the local context, there may be different motivations for introducing new ICT solutions to existing career guidance processes. In some cases, innovation in ICT-based services may be driven by the desire for rationalisation, for example due to overstretched financial or other resources available for guidance delivery. Or they may be driven by a high-level strategic review of organisational priorities, for example suggesting a need to improve the effectiveness of existing guidance practices. The effort required for acquiring *a-priori* knowledge concerning the ICT-supported guidance interventions envisaged, how these are envisaged to be delivered, and their potential impact on current service delivery, should not be underestimated.

Awareness raising and promotion based on evidence that demonstrate the benefits of ICT in lifelong guidance practices is vital. Lack of awareness and misconceptions about digital career guidance services and tools can hinder successful adoption and mainstream use in national lifelong guidance systems. To avoid this, effective ICT integration in career guidance services incorporate awareness raising and promotion efforts to spread the word about their benefits, ensure early buy-in by stakeholders and so foster widespread adoption and use.

Empowerment of career guidance practitioners and others who provide guidance services or guidance support, such as parents or teachers, is also crucial. Comprehensive information on the employability from diverse and alternative pathways, together with information on the actual work environments and career development possibilities of several occupations, can help the young to make informed choices about their future employment and education prospects. Since parents and teachers are essential to this process, appropriate information should be communicated to and via them.

The user-driven design of a practice significantly increases chances of successful and effective application of a tool. Portals that did not require advanced literacy or IT skills, and were characterised by simplicity and user-friendliness, were usually largely taken-up by end-users. This is important when the tools aim to address vulnerable groups, such as people

with disabilities and those of the third-age people. A strictly user-centred approach towards presenting digital information and tools can enable clients to make better use of LMI and related tools generally available to them. This may enable a larger share of the overall client base to work independently on personal career development.

Going digital requires a sensible strategy of inclusive guidance service: the trend towards the increasing use of ICT – particularly among young people – presents opportunities for widening access to lifelong guidance services to a broader client population. At the same time, this trend presents opportunities for responding more flexibly to individual client needs. The evidence collated for the study suggests that many organisations providing guidance services have started to develop multi-channel strategies, in terms of enabling effective self-service as demanded by users rather than in terms of pushing everybody online. The wider debate around the digital divide has highlighted different levels of exclusion potentially faced by sections of the overall population as more and more services – public or commercial – are going to be provided by means of online media.

Further improvement of the European evidence base on impacts of ICT-supported career guidance is needed. The evidence base on impacts achieved by LMI/ICT supported guidance practices has remained largely scattered, and robust evaluation data can rarely be found. There may be merit in augmenting the contribution of the current study to building up a European evidence base with further steps in this direction, with a view to supporting continued evidence-based policy development in this field. A European-level effort, for example driven by Cedefop, could play an important role in supporting what could be termed as 'informed' dialogue on the impacts of LMI/ICT supported career guidance. 'Informed' in this context refers to discussion and opinion forming that is based on information and concrete experience rather than conjecture. The evidence base and analysis provided by the current study could provide the raw material, but a similar follow-up line of activity could be pursued to support existing dialogue and opinion-forming forums and processes.

List of abbreviations

API	application programme interface
BA	Bundesagentur für Arbeit (DE) [Federal Employment Agency]
CV	curriculum vitae
ELGPN	European Lifelong Guidance Policy Network
EOPPEP	Εθνικός Οργανισμός για την Πιστοποίηση των Προσόντων και τον Επαγγελματικό Προσανατολισμό (EL) National Organisation for the Certification of Qualifications and Vocational Guidance
ESCO	European classification of skills/competences, qualifications and occupations
EU	European Union
EURES	European employment service
GBP	pound sterling
ICT	information and communication technologies
IEFP	Instituto do Emprego e Formação Profissional (PT) [Institute of Employment and Training]
IER	Institute for Employment Research (UK)
ISTP	Labour market internet guide
LMI	labour market information
PES	public employment service
PPO	practical professional orientation
RSS	rich site summary, or really simple syndication (type of web feed which allows users to access updates to online content in a standardised, computer-readable format)
SBB	Samenwerking Beroepsonderwijs Bedrijfsleven (NL) [Cooperation Organisation for Vocational Education, Training and the Labour Market]
SEA	State Employment Agency (LV)
SEK	Swedish krona
UWV	uitvoeringsinstelling werknemers verzekeringen (NL) [Employee Insurance Implementation Agency]

Country codes

BE	Belgium
DK	Denmark
DE	Germany
EE	Estonia
IE	Ireland
EL	Greece
IT	Italy
LV	Latvia
LU	Luxembourg
NL	Netherlands
AT	Austria
PT	Portugal
SK	Slovakia
FI	Finland
SE	Sweden
UK	United Kingdom

Bibliography

Buffet, C.; Ciliska, D.; Thomas, H. (2011). *It worked there. Will it work here?* Tool for assessing applicability and transferability of evidence. National Collaborating Centre for Methods and Tools. http://www.nccmt.ca/uploads/media/media/0001/01/bfb0cda5aaa62c5b5d9894e5c98804b85b41cf36.pdf

Council of the European Union (2008). *Council resolution on better integrating lifelong guidance into lifelong learning strategies.* 2905th Education, Youth and Culture Council meeting Brussels, 21 November. http://www.consilium.europa.eu/ueDocs/cms_Data/docs/pressData/en/educ/104236.pdf

ELGPN (2014a). *Lifelong guidance policy development: a European resource kit: ELGPN tools No 1.* http://www.elgpn.eu/publications/browse-by-language/english/ELGPN_resource_kit_2011-12_web.pdf/

ELGPN (2014b). *The evidence base on lifelong guidance: a guide to key findings for effective policy and practice: ELGPN tools No 3.* http://www.elgpn.eu/publications/browse-by-language/english/elgpn-tools-no-3.-the-evidence-base-on-lifelong-guidance/

ELGPN (2015). *Guidelines for policies and systems development for lifelong guidance: a reference framework for the EU and for the Commission: ELGPN tools No 6*. http://www.elgpn.eu/publications/browse-by-language/english/elgpn-tools-no-6-guidelines-for-policies-and-systems-development-for-lifelong-guidance/

Ongaro, E. (2009). *A protocol for the extrapolation of 'best' practices: how to draw lessons from one experience to improve public management in another situation.* European Public Sector Award 2009, Maastricht, 4 and 6 November 2009. http://epsa2009.eu/files/Symposium/An%20approach%20to%20the%20extrapolation%20of%20practices_EOngaro.pdf

Saaty, T.L. (1980). *The analytic hierarchy process*. New York: McGraw-Hill.

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This handbook supports the transfer and adaptation of career development tools used in guidance, early school leaving prevention, employment services, youth centres and other organisations. It provides insights for policy-makers and managers of careers into how to use the potential of ICT to help people find training and jobs, increase their employability, and develop their competences. Using detailed analysis of the most established and effective practices in the EU, it also offers a decision-making tool, to help readers select the best options for their local context and target group(s).

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