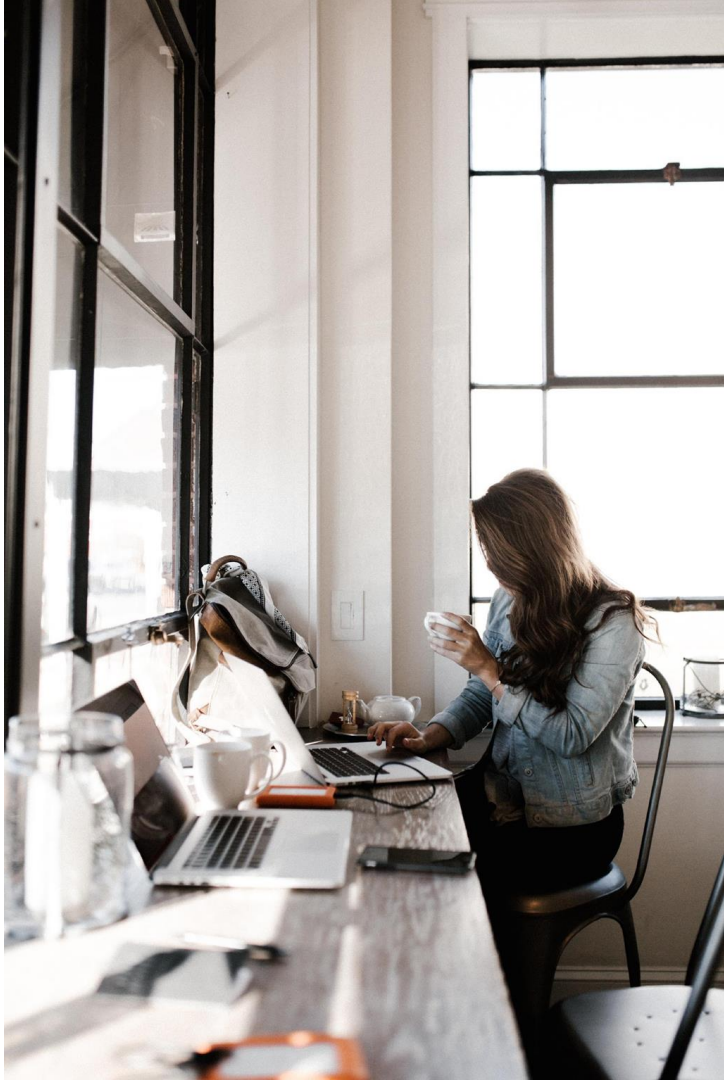
Module 4
Unit 2

Unit 2 – Labour market monitoring and available tools

Module 4: LABOUR MARKET AND NEW SECTORAL RESPONSES TO DIGITALIZATION



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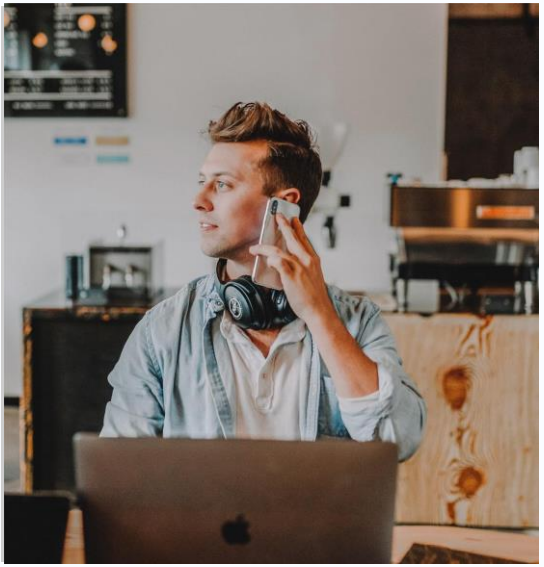
This project has been funded with support from the European Commission. This presentation reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Unit 2: The impacts of digitalization on the labour market and key sectors

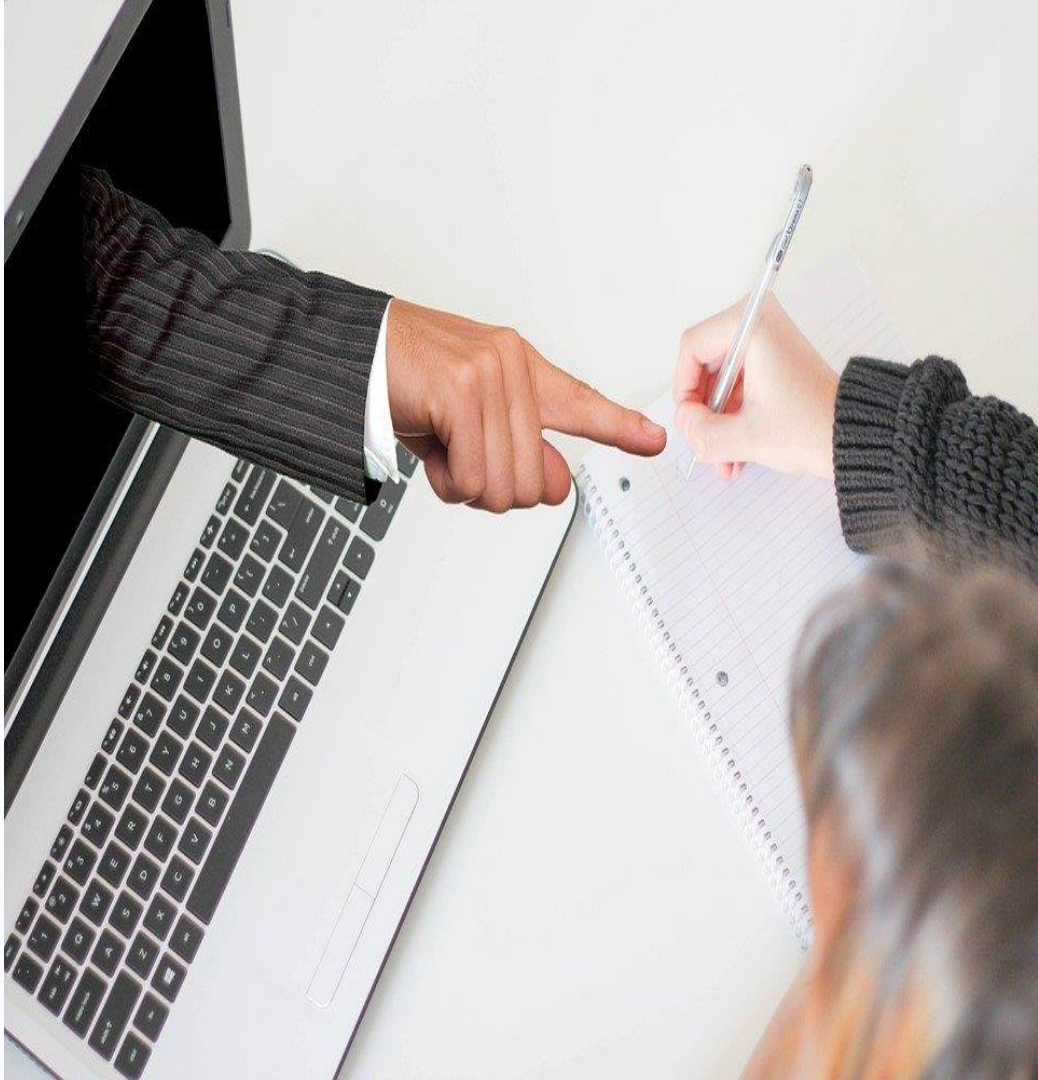
Module 4: LABOUR MARKET AND NEW SECTORAL RESPONSES TO DIGITALIZATION

1. The impacts of digitalization on the labour market and key sectors
2. **Labour market monitoring and available tools**
3. Policy responses to digitalisation



The objectives of this Unit are:

- This UNIT looks at practical ways that universities can understand the impact of digitalisation on the labour market.
- It examines the tools that are available to help them understand skills need now and in the future.



Contents

2.1. Overview of LMI and its purpose, and potential relevance to digitalisation

- Labour market information (LMI) provides information about the workplace and employment
- LMI makes clear what occupations exist, where work opportunities are increasing or decreasing, what qualifications are required to take up an occupation, how one can find a job, change job or progress in a career
- LMI tools can focus on what has happened in the past, what is happening now, and what is likely to happen in the years ahead
- LMI can provide data required for a labour market assessment, including data on skills shortages and gaps, employer investment in skills, and current and forecast occupational and sectoral employment levels and trends
- LMI provides the analytical insights into the key drivers, trends and issues affecting the skills market and the sector interventions required to adapt to the future world of work
- Labour market analysts produce a wealth of robust data and high quality analysis on employment and skills issues
- Numerous tools are available to meet the different needs, and can be used to support policy making in education, employment and economic development.

2.1. Overview of LMI and its purpose, and potential relevance to digitalisation

The importance of LMI

- High quality LMI is vital for a healthy, well-functioning economy, allowing businesses, individuals and public institutions to make informed decisions about investment, training and employment policies and economic decisions.
- LMI plays an increasingly important role in identifying future workforce and skills demands.
- The role of LMI is changing. It is increasingly playing an active part in the establishment of evidence-based policy and the strategy-making process and in designing training and labour market engagement strategies at global level.
- Providing high quality LMI is key to governments in most countries, and helps policymakers make well-informed decisions about learning and work. Digitalisation is making changes to the labour market which is making it difficult for anyone to predict with certainty what types of work will remain, and what new work will emerge.
- To act in this uncertain environment, a new generation of LMI products can help prepare businesses, individuals, public authorities and HE providers to make informed choices and to focus their efforts on emerging occupations and industries to: identify the best offer on training and education to feed the labour market; check out trends in a particular sector or geographical area; anticipate the skills needed in the future; or match the requirements of the labour market in curriculum development and strategic planning.
- The main rationale for skills monitoring and anticipation is that labour market failures make a case for public intervention.

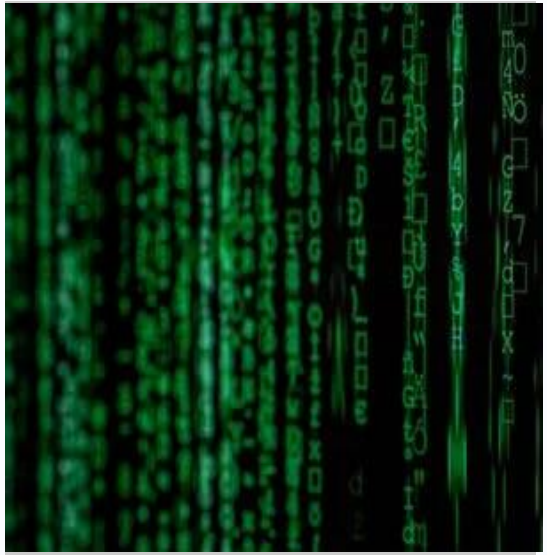
Source: [1] http://www.regionallabourmarketmonitoring.net/TOOLKIT/LAUNCH.html

2.1. Overview of LMI and its purpose, and potential relevance to digitalisation

Information LMI can provide

There is a wide range of LMI resources that can be used to provide labour market 'information' and 'intelligence' on:

- general employment, such as: what jobs exist, which sectors, the skills and education required etc.;
- national, regional and local labour market variations;
- historical trends, future demand and projections of likely change;
- training, education, and skills-upgrading;
- the way the labour market works (how people get into jobs and move between employers);
- labour demand vs labour supply as reflected in unemployment rates, skills gaps, skills shortages;
- specific data focusing on specific groups, sectors or skills;
- the workforce today and projections for the future such as age, education levels, skills etc.



Source: [1] http://www.regionallabourmarketmonitoring.net/TOOLKIT/LAUNCH.html

2.1. Overview of LMI and its purpose, and potential relevance to digitalisation

Forecasting and fore-sighting tools

- Fore-sighting and forecasting support decisions in areas which involve long lead-in times, such as education and training, and long-term labour market planning
- While foresights and quantitative skills forecasts have similar goals in informing decision-makers and stakeholders about likely future outcomes and their probable consequences, they differ in the way they are implemented, their requirements in terms of inputs, and in the types of outputs that they can generate

Source: [1] http://www.regionallabourmarketmonitoring.net/TOOLKIT/LAUNCH.html

2.1. Overview of LMI and its purpose, and potential relevance to digitalisation

Forecasting and fore-sighting tools

Fore-sighting

- Uses a range of methodologies e.g. scanning for emerging changes, analysing megatrends
- Strategic foresight does not attempt to offer a definitive answer, and is one of the best tools to support open policy making

Forecasting

- Makes predictions about the future, based on past and present data and the analysis of trends
- Quantitative skills forecasts offer a consistent and detailed picture of future developments by sector, occupation, qualification or skills
- Both qualitative and quantitative elements can be mixed to develop a skills anticipation model or method that is suitable for a country's or region's requirements

Source: [1] http://www.regionallabourmarketmonitoring.net/TOOLKIT/LAUNCH.html

2.1. Overview of LMI and its purpose, and potential relevance to digitalisation

Horizon Scanning

- Horizon scanning is a technique for detecting early signs of potentially important developments through a systematic examination of potential threats and opportunities, with emphasis on new technology and its effects on the issue at hand.
- The process of horizon scanning can be considered to encompass two separate approaches:
- "Continuous Scanning Activities" to keep the overview, with regular but discontinuous activities (e.g., every 5 years); and
- "Ad-hoc Horizon Scanning" for a specific purpose, on demand or at a specific occasion"
- A number of different horizon-scanning methods have been identified.

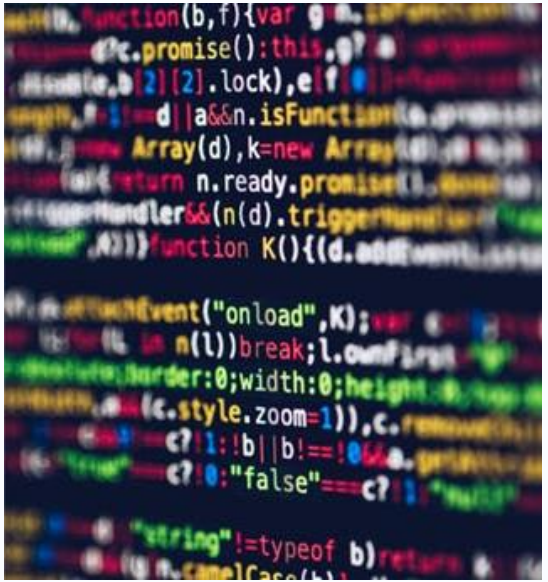
Source: [2] https://www.ncbi.nlm.nih.gov/books/NBK556423/

2.1. Overview of LMI and its purpose, and potential relevance to digitalisation

Different LMI tools

Traditionally LMI has often been provided through a combination of data repositories and analytical services. There are two main types of information that can be gained from LMI research:

1. Quantitative information can be taken from statistics data, surveys or quantitative prospects as for example official population or education statistics, labour force survey or employer survey data, projections of economic and occupational growth, etc.
2. Qualitative information is usually extracted from in-depth interviews and focus groups or other analytical tools (delphi, documental analysis on trends, professional networks,..) in order to understand better the challenges of an economic sector, trends on technological impact on occupations and skills. Qualitative information tends to be richer and more detailed than quantitative information, but it cannot be considered to be as statistically representative.



2.1. Overview of LMI and its purpose, and potential relevance to digitalisation

Selecting the right kind of LMI tool

There is a great deal of LMI available from many sources, and it is organized in different ways for different audiences and it is essential to be selective. LMI tool assessment should draw on a wide range of data sources, including robust, recognised secondary as well as qualitative research. The first priority when thinking about selecting an LMI Tool is to identify what information and knowledge you need to make key decisions. Then to consider:

- What type of information does the LMI tool provide?
- Who produced the LMI and how much confidence do you have in the data collection methods:
    - o Is it trustworthy and robust?
    - o Where does the accompanying information come from?
    - o Who gathers it? Who analyses it? Who organizes it?
    - o Does the LMI data meet your objectives and priorities? I.e. is it useful, relevant and appropriate?
    - o Is it up to date or the most current available: When the next data releases will be available?; What has happened in the labour market since the research was carried out (assess the likelihood of changes that may have happened since the research was completed)?
- If possible, choose more than one source to achieve a more balanced and reliable view.

Source: [1] http://www.regionallabourmarketmonitoring.net/TOOLKIT/LAUNCH.html

2.2. Exploration of international/European monitoring, forecasting and fore-sighting tools

In this section we describe a number of Tools currently available for you to use on your own geography or to explore for good practice. We have selected:

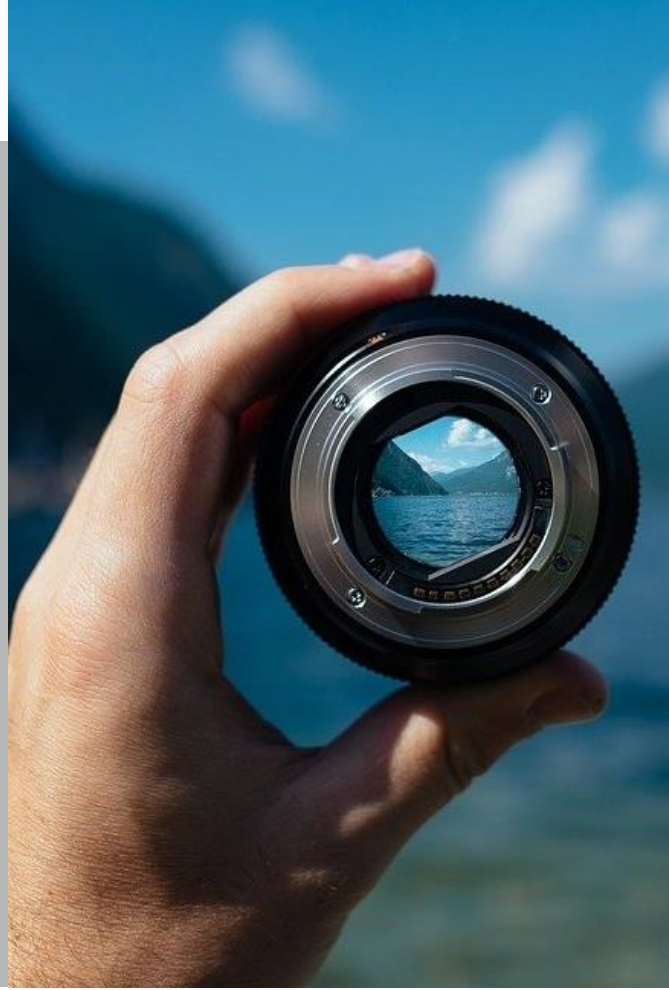
1. CEDEFOP Skills Forecast
2. Skills Ovate
3. Skills Panorama
4. Warwick Institute IER
5. European Data Portal

BREXIT NOTE – the EU elements no longer include the UK. Therefore we have included UK focussed ones such as Warwick Institute IER - Working Futures.

Example

Cedefop Skills Forecast

- Cedefop Skills Forecast provides comprehensive information on future labour market trends in Europe including projections on labour force, employment trends and job opportunities.
- The forecast acts as an early warning mechanism to help alleviate potential labour market imbalances and support different labour market actors in making informed decisions.
- In 2010, Cedefop received a mandate to forecast trends in skill supply and demand for Europe every two years.
- The Skills forecast is one of the key building blocks of the Skills Panorama under the flagship initiative Agenda for New Skills and Jobs of the Europe 2020 strategy.
- The Skills Forecast does not intend to replace skills anticipation and forecasting initiatives taking place at national level, which are often built around more sophisticated methodologies and may offer a greater level of detail.
- The strength of the Cedefop Skills Forecast is that it uses harmonised data and a single methodology to make results comparable across countries which can be aggregated to provide an overall picture of trends and skill development in the EU.
- The results cover all EU Member States plus a few more countries.
- The Cedefop results and methodology are validated by national experts representing a wide range of expertise including academics, labour market economists, econometricians and statisticians. The national experts represent all 33 countries covered by the Cedefop skills forecast.

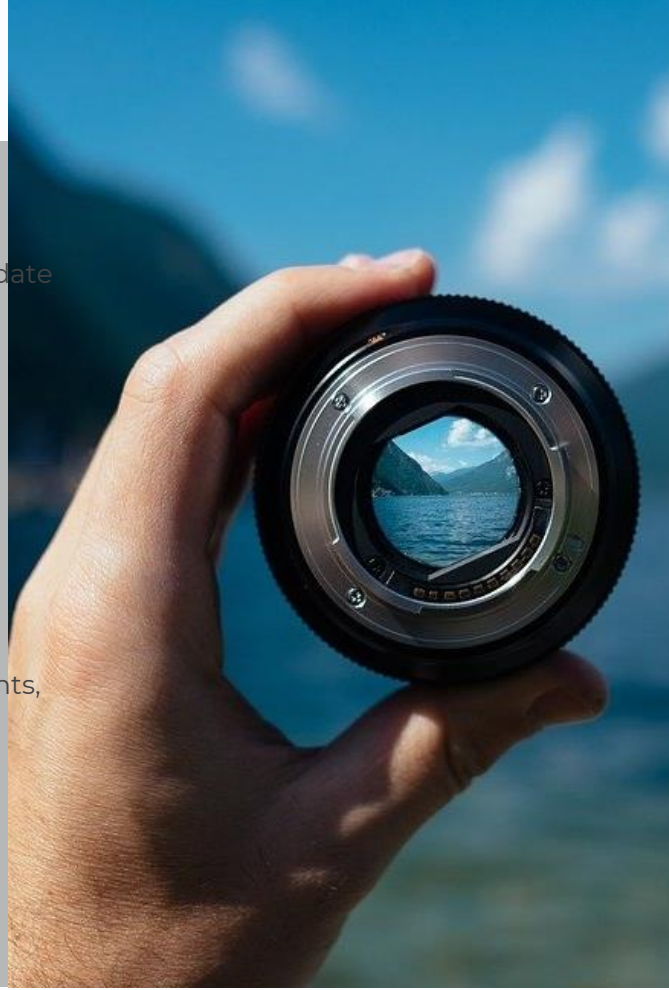


Source: https://www.cedefop.europa.eu/en/publications-and-resources/publications/3077

Example

Skills Ovate

- Skills-OVATE uses data from web vacancies and as a consequence will has very up-to-date content.
- You can access information from millions of online job advertisements, coming from thousands of sources, including job portals, public employment services, recruitment agencies, newspapers and employer websites.
- However some jobs are not advertised online and consequently there tends to be over representation of certain categories of role and under-representation of others.
- Nonetheless this is a reliable and timely data resource
- It offers detailed information on jobs and skills employers demand in online job advertisements.
- It enables you to access information retrieved from millions of online job advertisements, coming from thousands of sources, including private job portals, public employment service portals, recruitment agencies, online newspapers and employer websites
- The tool presents data collected from July 2018 until December 2019 in 28 European countries.
- Cedefop is continuously working on improving data quality and expanding the functionalities of the system.
- The expanded version of Skills-OVATE was released at the end of 2020.



Source: https://www.cedefop.europa.eu/en/data-visualisations/skills-online-vacancies

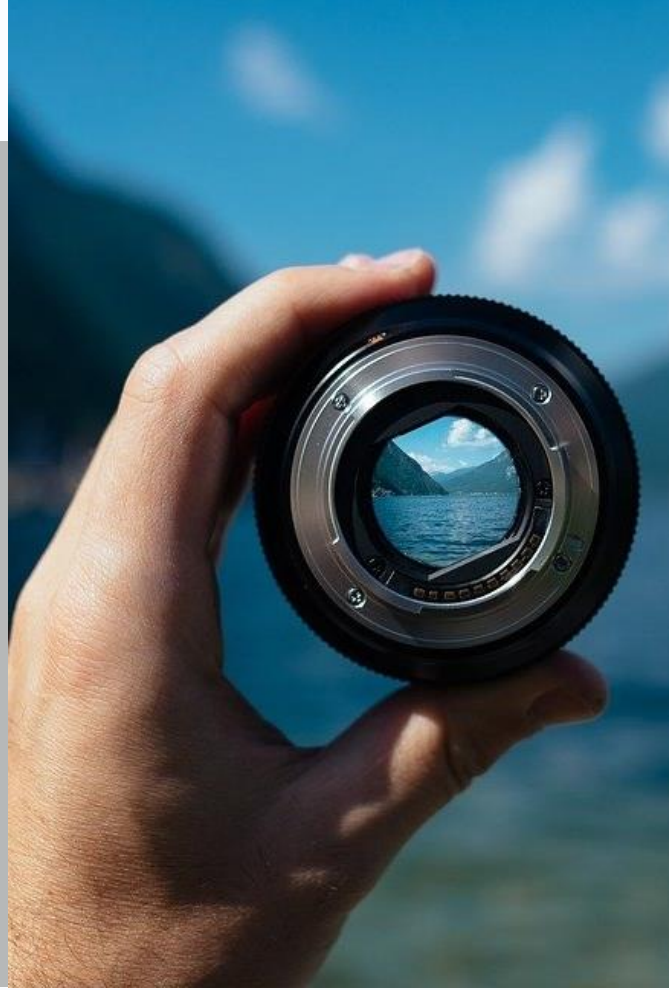
Example

Skills Panorama

- Provides the latest developments and trends in skills and occupations;
- Turns labour market data into accurate and timely intelligence to offer new insights into skill needs in the European Union;
- Helps policy-makers, policy-experts, researchers and guidance practitioners to keep up with the latest developments, make useful comparisons to previous trends or identify anticipated changes;
- Aims to foster the development or improvement of skill needs assessment and anticipation which in turn, is a milestone for education and training systems becoming more responsive to labour market needs; and for better matching of skill supply and demand across the EU.
- Data and intelligence is broken down by sector, occupation, country and policy themes and include predictions (forecasts) for future growth

It is aimed at:

- Policy-makers, policy analysts and policy experts: supporting their informed decisions mainly on education, training and employment issues
- Career guidance practitioners: enable their work in helping citizens to choose, develop or change their education and career pathways
- Researchers: offering them a wealth of data and information on skills and labour markets in the EU



Source: https://skillspanorama.cedefop.europa.eu/en

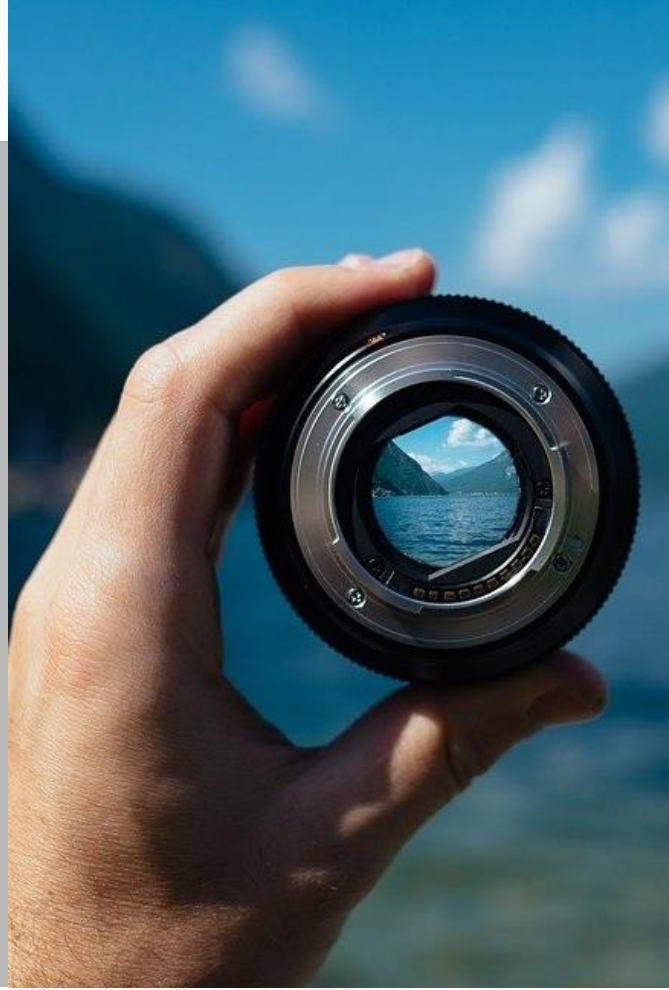
Example

UK examples – IER and NESTA

IER is a leading international social science research centre renowned for consistently delivering high quality research on Labour market assessment and Labour market forecasting. Software packages include:

- CASCOT: Computer Assisted Structured Coding Tool. Cascot is a computer program designed to make the coding of text information to standard classifications simpler, quicker and more reliable.
- LEFM: Local Economy Forecasting Model. LEFM is a custom built computer package designed to enable users to produce their own economic projections for local areas within the UK. It provides a more complete economic picture of the local area covering various key economic indicators and a number of labour market indicators as well as employment.
- Working Futures . These present a view of medium to longer-term trends for the UK economy and labour market (5-10 years ahead). The results should be regarded as a robust benchmark for debate and used in conjunction with a variety of other sources of Labour Market Information.

Nesta is a think tank which includes future-scoping and analysis of emerging trends in their remit. They have a number of accessible Toolkits, some that tackle AI as a theme.

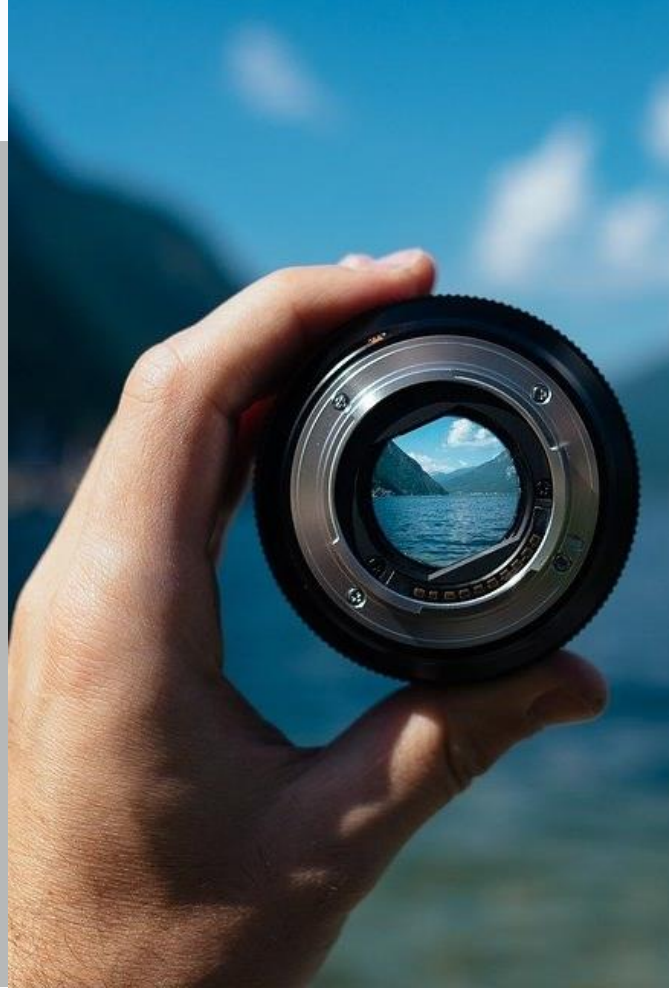


Sources: https://warwick.ac.uk/fac/soc/ier/ https://www.nesta.org.uk/

Example

European Data Portal

- The European Data Portal harvests the metadata of Public Sector Information available on public data portals across European countries.
- Information regarding the provision of data and the benefits of re-using data is also included.
- The strategic objective of the European Data Portal is to improve accessibility and increase the value of Open Data:
  - Accessibility: How to access this information? Where to find it? How to make it available in the first place? In domains, across domains, across countries? In what language?
  - Value: For what purpose and what economic gain? Societal gain? Democratic gain? In what format? What is the critical mass?
- The European Data Portal addresses the whole data value chain: from data publishing to data re-use.



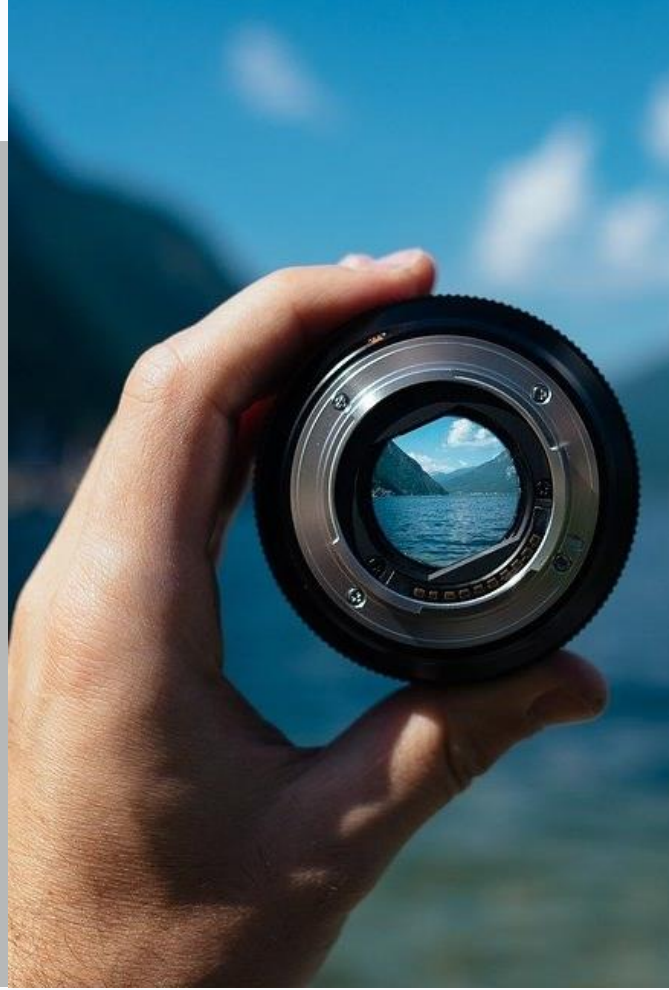
Sources: https://www.europeandataportal.eu/en

Example

USA example – O*NET

The O*NET Program is the U.S.A.'s primary source of occupational information. The organisation responsible for labour market projections in the USA is the Bureau of Labour Statistics which has been examining future job prospects for over 50 years.

- Projections are based on macroeconomic growth, population census and labour force surveys, and occupational employment surveys.
- Efforts have been made to measure generic skills in recent years, including the development of the O*NET system.
- The O*NET system provides valid data to help in the understanding of the rapidly changing nature of work and how it impacts the workforce and U.S. economy.
- Applications are developed to facilitate the development and maintenance of a skilled workforce.
- The O*NET database is central to the project and contains hundreds of standardized and occupation-specific descriptors on almost 1,000 occupations covering the entire U.S. economy.
- The database, which is available to the public at no cost, is continually updated from input by a broad range of workers in each occupation.
- O*NET information is used by millions of individuals every year, including those taking advantage of O*NET Online, My Next Move, and other publicly and privately developed applications. The data have proven vital in helping people find the training and jobs they need, and employers the skilled workers necessary to be competitive in the marketplace.



Sources: http://www.onetcenter.org.data or http://www.laworkforce.net/ofc/index.htm

Example

Other International examples

Canada - Employment projections - http://www.hrdc-drhc.gc.ca

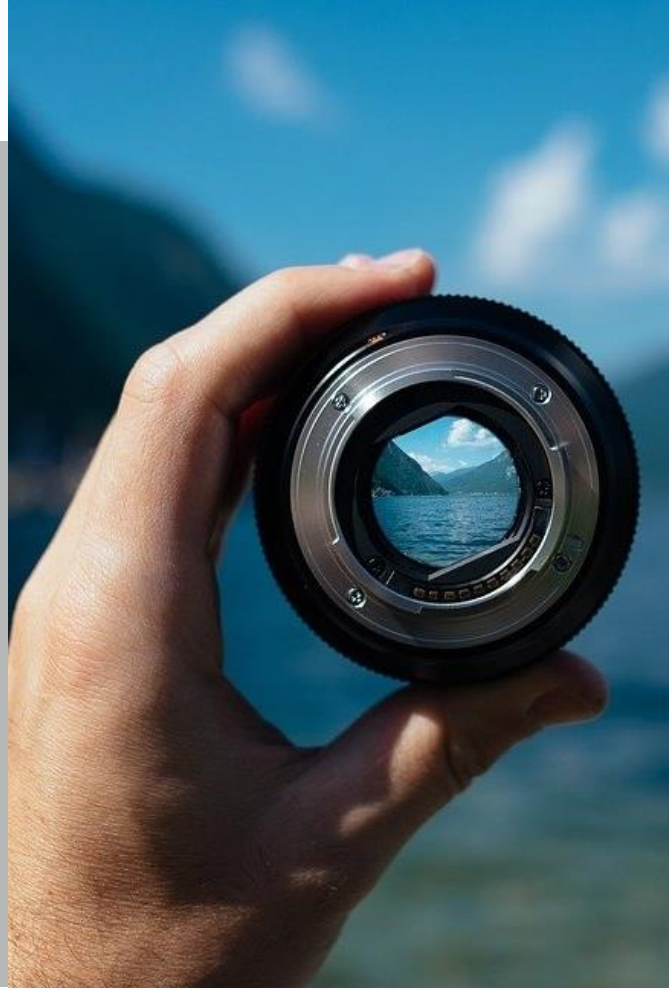
Ireland - Occupational forecasting model - http://www.esri.ie

The Netherlands - Forecasting model - http://www.fdewb.unimaas.nl/roa

France - Quantitative employment projections - http://www.bipe.fr/frameset_base.html

Germany – IAB (Institute for Data Research) - https://www.iab.de/en/daten/arbeitsmarktentwicklung.aspx

Italy - WollyBi analyses job ads - https://data.wollybi.com/visual/public/index



2.3. Sectoral Tools

- Sector studies are an example of qualitative approaches to anticipating skill needs.
- National Tools often allow sectoral analysis
- EU supported Sector Skills Councils are potential resources for larger sectoral trends
- LMI tools can be used to anticipate trends within sectors, and indeed individual occupations.
- Web scraping tools like Skills-Ovate and Skills Insight from Burning Glass can be used to interrogate sectoral data
- Ireland carries out sector-specific foresight exercises using a similar approach to that outlined for Australia (next slide).

Example of a sectoral report (Creative sector) https://dma.org.uk/uploads/ckeditor/UK_Digital_and_Creative_Sector_Report.pdf

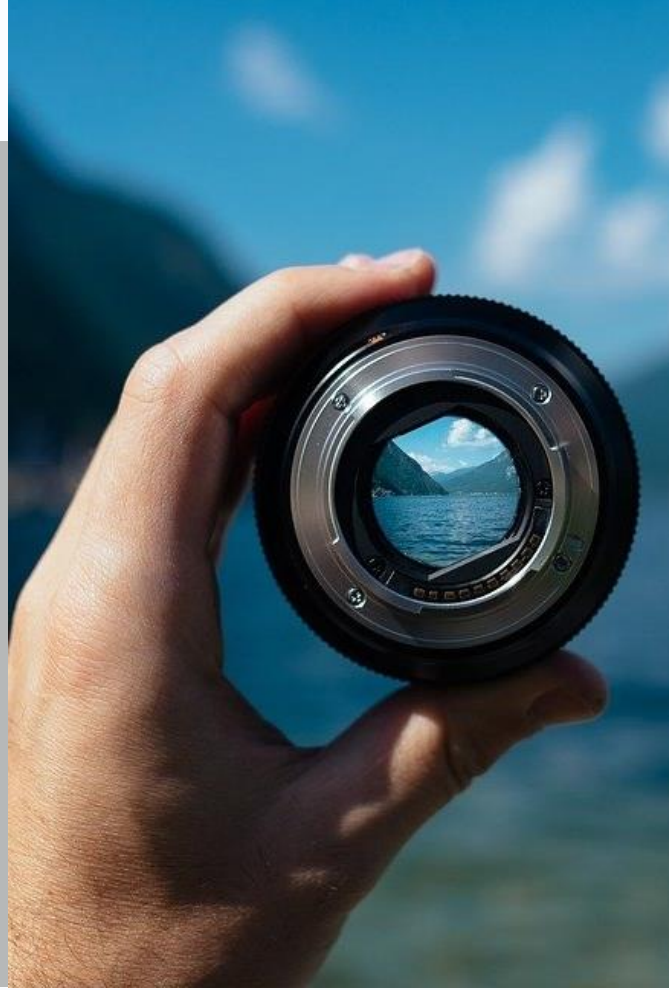
Example of a sectoral Report (Public Sector) https://www.rsa.com/en-us/blog/2019-11/the-impact-of-digital-transformation-in-the-public-sector

Example

Australia's Industry Skills Forecast

Australia's Industry Skill Forecasts are qualitative snapshots of the current and future skill needs of a particular industry. They draw upon interviews or focus groups with experts and actors involved in developing and using skills in that sector.

- Australia's Skills Impact is a not-for-profit, industry-owned organisation that works across Australia to benchmark learning and skills standards for industry.
- Industry Reference Committees (IRCs) conduct sector-specific Skills Forecasts which describe industry trends, opportunities and challenges, and identify skills gaps and emerging skills needs.
- They propose a four year plan for reviewing and developing relevant units, skill sets and qualifications across a training package. They are created once every three years, but are updated annually.
- The Annual Updates identify any specific changes to the industry environment, and to address current priority issues.
- Every year in April, the full Skills Forecast or Annual Update is submitted by the relevant IRC to the Australian Industry and Skills Committee (AISC).
- The AISC advises Industry and Ministers on the implementation of national vocational education and training policies.



Sources: https://www.skillsimpact.com.au/irc-skills-forecasts/

2.4. Exploration of what LMI universities use and why

- Across the globe, Government and industry leaders are challenging Universities to make it their mission to teach the skills that are needed by employers and to achieve better employment outcomes for their graduates.
- Better alignment of courses with industry needs and achieving better employment outcomes for students have not traditionally been issues at the top of the agenda for most universities.
- LMI is crucial to understanding what the labour market needs and the tools explored in this course will help ensure these new priorities are met.

2.4. Exploration of what LMI universities use and why

Universities use LMI for a variety of reasons

- To establish the skills needed within the workplaces that their graduates will enter
- As part of curriculum development and curriculum planning
- As part of planning non-curricular support on these such as entrepreneurship and soft skills development
- As part of their recruitment activities and Human Resource planning
- To research many themes around the world of work including:
    - o Future of Work
    - o Economics
    - o Social Policy
    - o Employment and Unemployment Policy and Programmes
    - o Social Partnerships

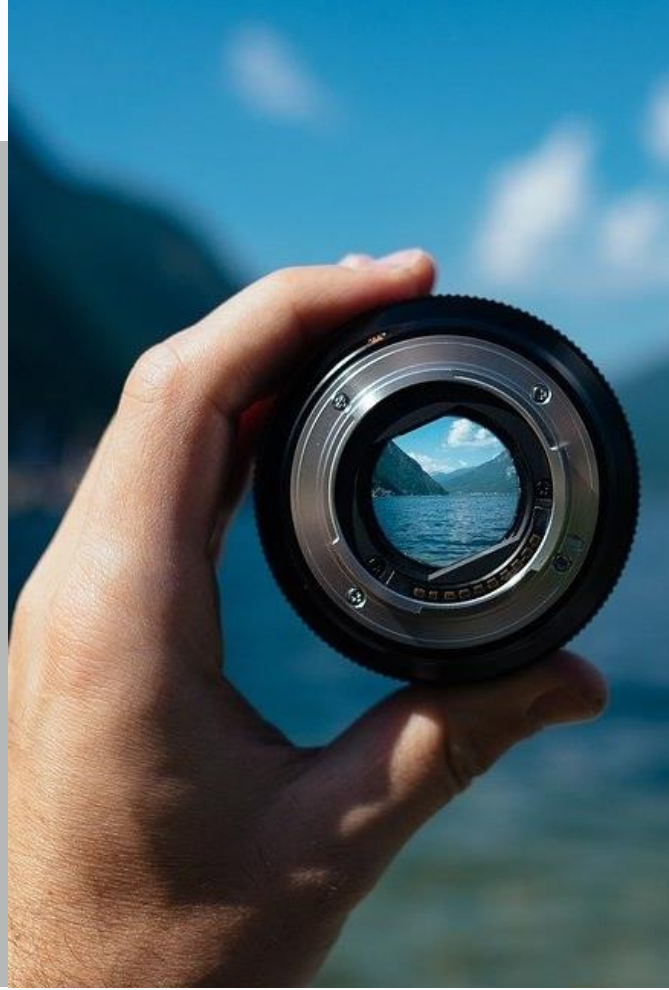
The next few slides show examples of LMI sources used by Universities

Example

Active Informatics

Active Informatics provide paid for LMI based largely on Job Vacancy Data:
- They include a suite of potential Tools you can access:
- UK Labour Market Tracker
- Labour insight UK
- Labour Insight International
- Careers Explorer
- Intuition Careers Tracking

New UK subscribers receive a free 90-day county snapshot report is available to those working within universities, local government, careers and recruitment. The report includes:
- Job demand by town
- Job demand by occupation
- Job postings by occupation families
- Top employers
- Top skills in demand
- Education levels required



Sources: https://www.activeinformatics.com

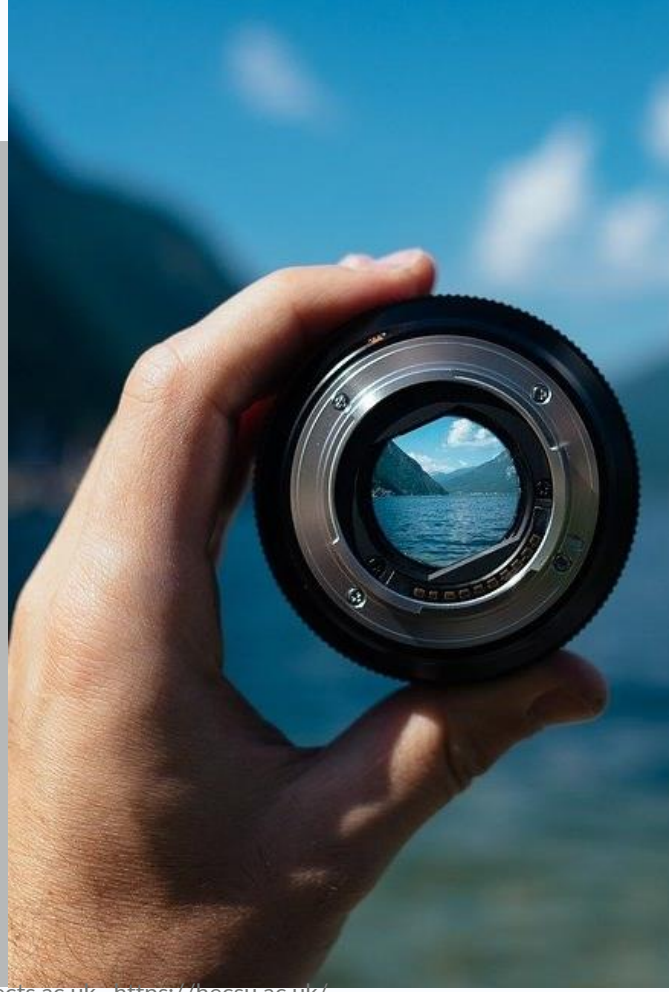
Example

LMI in UK Universities

In the UK, there are 4 main sources of periodic graduate LMI releases that the higher education sector has access to:

1. Higher Education Statistics Agency (HESA) – derived from:
   - Destinations of Leavers from Higher Education (DLHE)
   - Graduates Outcomes
   - Longitudinal Educational Outcomes
2. The Association of Graduate Careers Advisory Services (AGCAS)
   - of which all UK HE Careers Services are members and share vacancy and employment data
3. Higher Education Careers Services Unit (HECSU)
   - UUK owned and aligned to the work of AGCAS focusing on graduate LMI but also tracks and cascades other LMI;
   - Prospects conflates LMI for the benefit of UK students and job hunters
4. Institute of Student Employers (ISE)
   - the 'voice' of large graduate recruiting employers work closely with AGCAS and HECSU.

All 4 generate their own primary LMI data whilst AGCA, HECSU and ISE will also act as a portal for other ad hoc sources of LMI and cascade cutting edge LMI research / 'world of work' reports and publications.



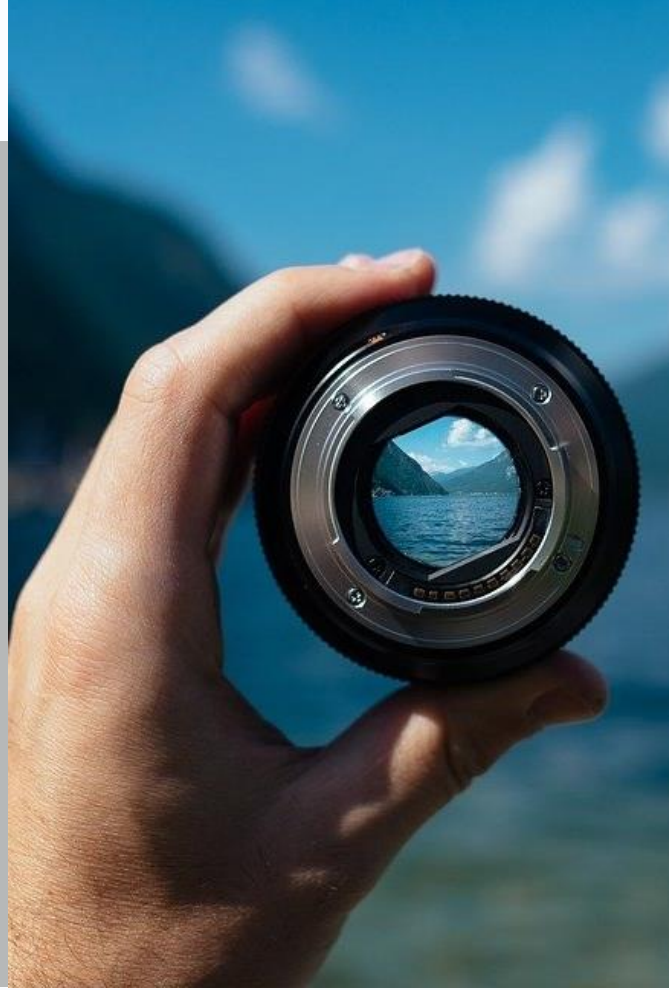
Sources: https://www.agcas.org.uk/AGCAS-Research www.prospects.ac.uk https://hecsu.ac.uk/ https://ise.org.uk

Example

EMSI in the USA

EMSI is a labour market data company headquartered in Moscow, Idaho with offices around the US and in the UK. They serve clients across the US, the UK, Canada, and Australia.

- EMSI uses labour market data to connect people, education and employers
- EMSI delivers data across FE, HE and economic development markets to help organisations better understand their local labour market, so that they can make strategic and tactical decisions
- EMSI aims to give HE providers the insight they need to understand employer demand and ensure they are making good use of public funds.
- EMSI are working with universities across the country and internationally to help them solve these issues in their portfolio planning, student engagement, degree apprenticeships, and impact assessment.

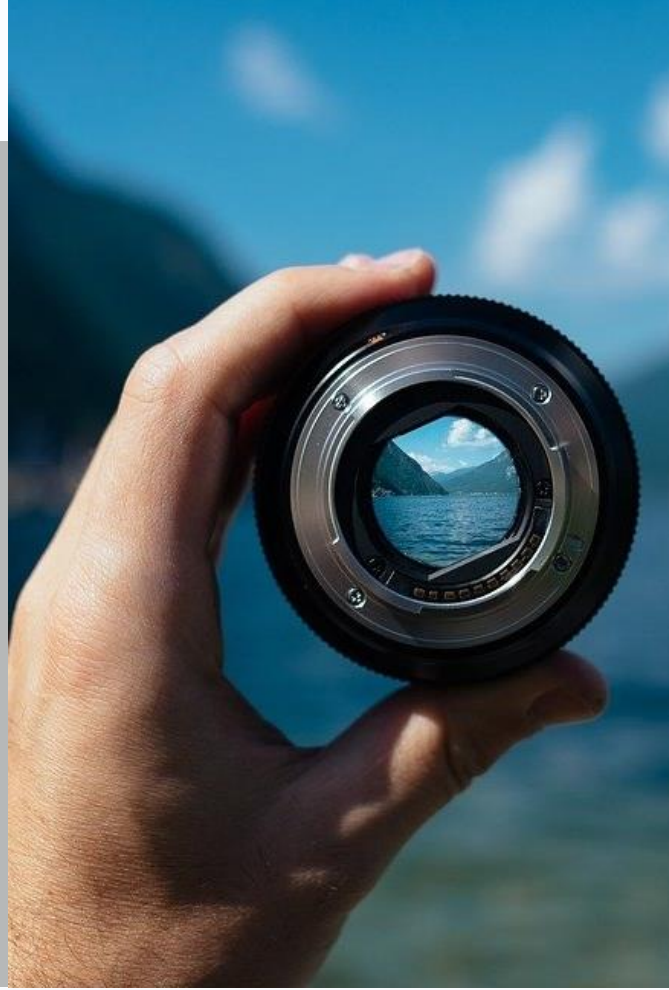


Sources: https://www.economicmodeling.com/

Example

AlmaLaurea in Italy

- Surveys the Profile and the Employment status of the graduates after 1, 3 and 5 years, returning data to the member Universities, and government
- Monitors the students' learning paths and analyses the graduates' features and performance at the university and in the job market, making it possible to compare different university courses and venues (universities)
- Collects and makes available online the resumes of the graduates
- Evaluates the need and professional profiles required by public and private, Italian and foreign companies
- Offers reliable documentation that can facilitate decision-making processes and the planning of educational, orientation and service activities - Monitors students' educational programmes and analyses the characteristics and performance of graduates on academic and employment fronts, allowing a comparison
- University Placement Teams use the AlmaLaurea database and its dashboards to support the events and services.
- To link contents of the course with the demand of the labour market
- To understand how to orientate the search of new companies to collaborate with, in order to attract new job opportunities and to let know the availability of Bicocca graduates to the most difficult to reach branches.



Sources: https://www.almalaurea.it/en

Example

Tools used in Basque Universities

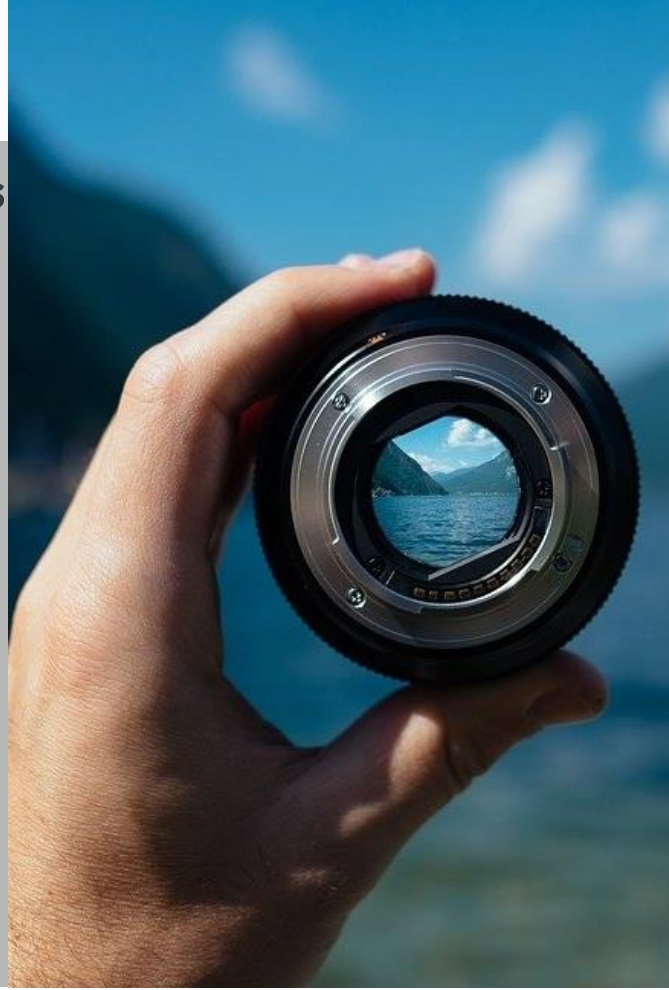
Universities in the Basque region utilise the LMI tool FutureLan which is an Observatory of employment prospects and occupational trends in the Basque Country.

FutureLan:

- has projections of the demand and supply of employment in economic sectors, occupations and levels and branches
- is a key instrument for obtaining early information on the demand for workers in Basque companies and potential future mismatches
- is of interest to all those people and organizations that need useful information on the future demand for professionals in companies

Within the region there is also the Basque Talent Observatory which provides job-related information on the web. It makes available two different areas to allow data access to various types of users; citizens and analysts. In addition to some concise information the dashboard shows:

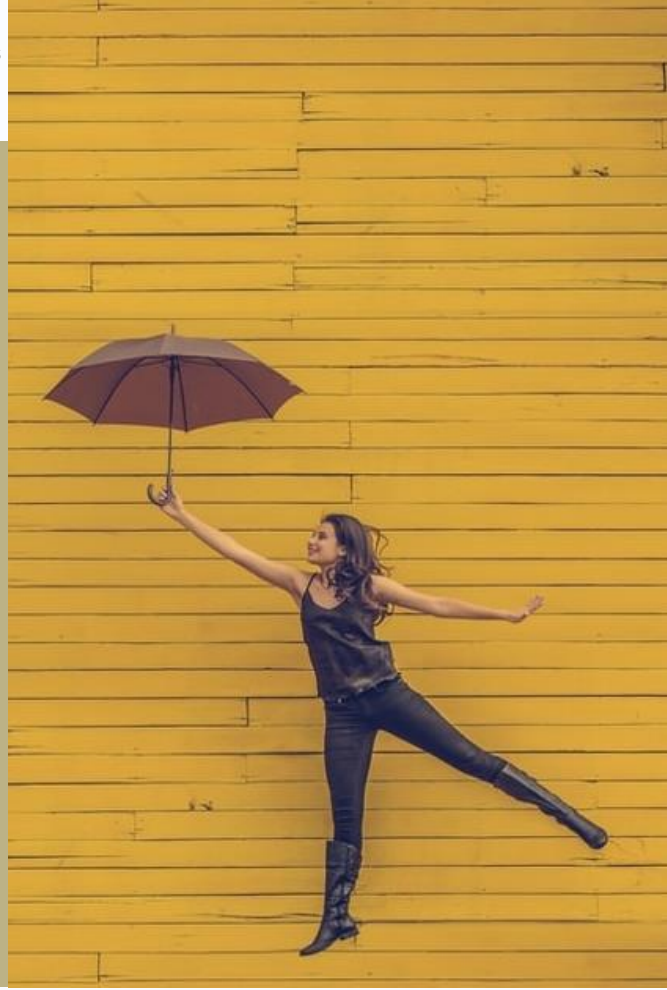
- New vacancies by week
- Active vacancies by week
- Top occupations
- Vacancies by area



Sources: https://futurelan.eus/es/

Key takeaways

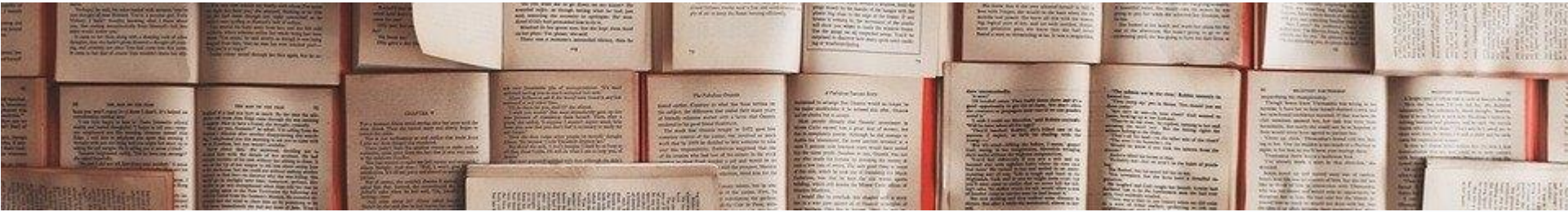
- Labour market information (LMI) tells you about the workplace or labour market and describes the condition of the labour market, past and present, as well as future projections LMI is any quantitative or qualitative data about the nature and operation of the labour market.
- The uncertain context and future make LMI central as a provider of the analytical insights into the key drivers, trends and issues affecting the skills market and the sector interventions required to adapt to the future world of work.
- Currently, labour market analysts and those working on a regular basis with labour market intelligence produce a wealth of robust data and high quality analysis on employment and skills issues across the countries and regions.
- Numerous tools are available to meet the different needs, and can be used to support Universities.
- In this section you have seen a number of varieties and the kinds of data they provide.



Reflection

- In the context of your own institution - find out what kind of LMI is used, by whom and for what purpose.
- Are they missing out on available LMI?
- Are there examples from this course that may help identify what else could be available to help your university?
- If some LMI is not available – what is it and who may have it (regional government, survey companies, employers etc.)?

References



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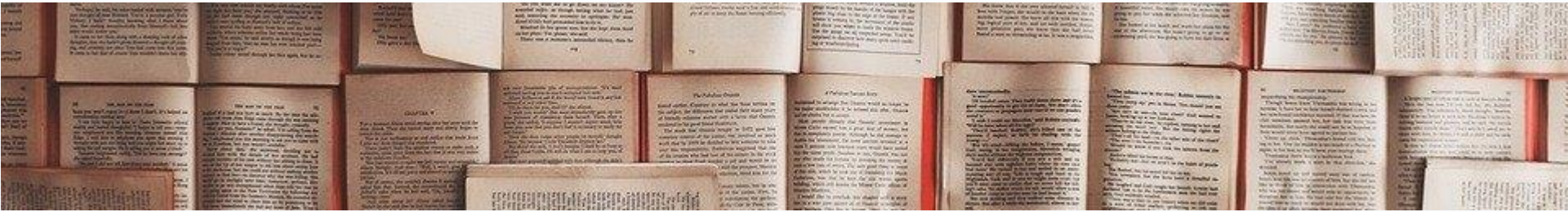

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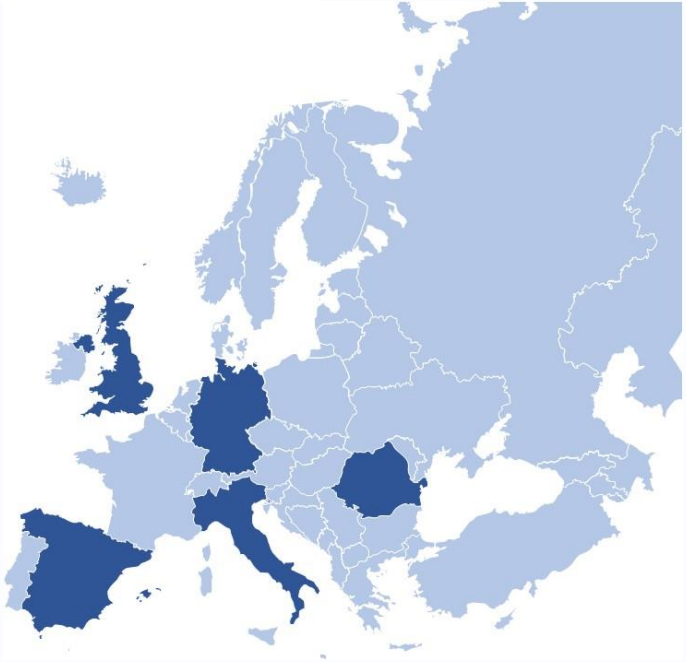

Authors

Dr Andrew Dean and Dr Lindsey Anderson
Marchmont Observatory, University of Exeter, UK

www.escalate.projects.uvt.ro
@DigitalEscalate

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