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How to prevent unemployment in a changing world of work?

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[1] DECISION No 573/2014/EU

PES NETWORK ANNUAL MUTUAL LEARNING CONFERENCE

How to prevent unemployment in a changing world of work?

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BACKGROUND AND RATIONALE

Technology is driving a noticeable transformation in the world of work. This is creating both considerable opportunities as new jobs emerge and significant insecurity as some skills and occupations become redundant because of digitalisation and automation. Several stakeholders must collaborate to support people in managing these considerable changes. These include a range of public and private organisations, employers, NGOs, and crucially Public Employment Services (PES).

This changing environment presents challenges for all labour market actors. The EU PES Network Strategy to 2020 and beyond[1] notes "the significant transformation in the external environment within which employment systems operate". It lists a number of key trends, including "rapid technological enhancement within times of industrial transformation, changing working life with new forms of employment, demographic change (with ageing populations), increased migration, different career patterns, new social attitudes of (younger) jobseekers, and continuing low participation rates amongst vulnerable groups".

These changes mean that labour market actors must work to design and deliver support systems and practices which can prevent people falling into long-term unemployment, inactivity, and social exclusion because of these changes.
PES have an especially pivotal role in identifying and addressing barriers faced by some citizens which potentially prevent them from maintaining their labour market attachment as the pace of change increases. In order to meet and overcome changes in this rapidly evolving environment, PES will need to work particularly closely with employers and training and skills providers. Small and Medium Entreprises (SMEs) are crucial providers of jobs and often need particularly intensive support from PES to adapt to labour supply changes. Skills mismatches and ageing

populations mean that employers are increasingly facing skill shortages. Both policy developments and the institutional landscape need to keep pace to ensure that structural changes can be managed effectively.

Several European policy instruments have been introduced to assist these rapid transitions.
The Council Recommendations on Upskilling Pathways[2] and the Youth Guarantee[3] call for Member States (MS) to provide structured assistance to ensure that neither adults with skills deficits nor young people not in employment education or training (NEET) fall into inactivity due to a lack of suitable skills for the labour market. The Recommendation on the Integration of long-term unemployed (LTU) people into the labour market[4] defines a personalised, customer-focused support system, combining inputs from various stakeholders to orientate the LTU towards integration.

In recent years, there has been a focus within the PES Network on considering the implications of changes in the world of work. Notable recent contributions to the debate include a Working Group and Stakeholder Conference in November 2018 on the Future of Work, and Thematic Review Workshops in June 2017, on PES Engaging with and improving services for employers. Digitalisation was one of the major strands of the 2018 PES Network Work Programme. This included the production of a Thematic Paper and a Thematic Review Workshop, following a previous event on this subject in June 2016, development of Starting Guides for PES and a seminar on Big Data.

This Thematic Paper was produced in the context of a Stakeholder Conference in October 2019 considering "How to prevent unemployment in a changing world of work". This was attended by representatives of PES from 28 countries and diverse labour market stakeholders. The latter

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[1] PES Network Strategy 2020 and beyond https://www.pesnetwork.eu/download/pes-network-strategy-2020-and-beyond.

[2] Council Recommendation of 19th December 2016 on Upskilling Pathways, New Opportunities for Adults (2016/C484/01).

[3] Council Recommendation of 23rd April 2013 on establishing a Youth Guarantee (2013c 120/01).

[4] Council Recommendation of 15th February 2016 on the integration of the long term unemployed into the labour market 92016/C 67/01.

included social partners, private employment services (PrES), education and training service providers, academics, national and labour market experts, business representatives, employer organisations, and international organisations, including OECD, ILO and WAPES (World Association of Public Employment Services (WAPES).

The Conference focused on a number of key themes: the role of training/upskilling, career guidance, use of ICT, forecasting future skills needs, communicating prevention measures, involving employers, how to agree on the responsibilities of stakeholders in employment partnerships, and providing specific support for young people's transitions.

This paper draws upon literature, previous PES Network studies and activities, and outputs from the Conference.

The rest of the paper is structured as follows: Chapter 2 considers current issues in the prevention of unemployment, Chapter 3 discusses strategic responses and approaches for PES and stakeholder partners in preventing unemployment, Chapter 4 summarises key issues and presents recommendations.

CURRENT ISSUES IN THE PREVENTION OF UNEMPLOYMENT

Digitalisation and automation are driving increases in both the rate of labour market transitions (European Commission 2018a) and the extent of non-standard employment (Schmid 2016).

Changes from automation will lead to the disappearance of some jobs. A 2016 OECD study (Arntz et al.) concluded that 14% of jobs have a probability of over 70% of being totally automated, and 32% of jobs have a probability of automation between 50% and 70%. There is an expectation that as a minimum many of the component tasks will be replaced by Artificial Intelligence (AI). Whilst there will clearly be large scale transformation and uncertainty, it would be inaccurate to describe a future without jobs. A 2019 OECD study predicts that job losses will be concentrated in sectors where processes can be automated to be performed with minimal human intervention. Consequently, certain sectors, i.e. manufacturing, transport, and construction, are expected to be particularly affected. Conversely, cultural factors and technological limitations will prevent automation in other sectors.

Particularly noting the broader socio-economic impact of globalisation, digitalisation, climate change, and demographic change, the ILO has identified job creation opportunities. It predicts 24 million green jobs, and the ageing population will generate 269 million care jobs by 2030. A World Employment Confederation Europe and Uni Europa report (2018) reported a probable increase in transition phases during life across all professions and sectors. Scoppetta (2019) has noted that the traditional model of a single job and employer for life is becoming increasingly uncommon, and that classical transitions, i.e. education to work to retirement, are being replaced by nonlinear transitions which are necessary to facilitate the lifelong learning required to maintain labour market attachment.

The primary challenge for PES and other actors may in future be how to promote and sustain quality employment rather than preventing unemployment. Opinions vary as to the effect of automation on future aggregate labour demand, however it is broadly accepted that some skilled work will disappear and new jobs will emerge, whilst certain lower-skilled occupations will continue. In managing more frequent transitions as a consequence of digitalisation, PES will need to intervene to try and ensure that, where possible, people made redundant can be supported to transit to available quality jobs in growth sectors. This will require enhanced employer engagement activities, reorientation of some training provision, and a more focused analysis of likely developments in skills demand. This issue could be especially pertinent in an environment where labour demand is likely to shift away from some higher-paid manufacturing jobs towards the provision of services in sectors such as elderly care which have traditionally been low paid.

Non-standard employment (NSE) through the platform (or gig) economy is of increasing importance. It certainly assists some people

(e.g. those with caring responsibilities) in the more effective management of a work-life balance through flexible working patterns. Others can, however, experience difficulties due to unpredictable income, the lack of social protection from unemployment/health insurance, and limited opportunities for training and skills development. It can be more difficult for PES and other support services to assist people in more precarious situations, limiting their ability to tackle unemployment and address social exclusion for some clients.

PES will have an increasingly important role in preventing labour market exclusion and dealing with the challenges from reduced job tenure, especially for young people. In preventing unemployment in the changing world of work, PES must maintain a connection with jobseekers. In some countries, this can be difficult, as across the EU many unemployed people do not receive benefits and are not registered.

A key aspect of the 4th Industrial revolution is the change in labour market dynamics driven by advances in technology. The "job for life" concept diminishes, mass production recedes whilst the service economy expands, and the traditional distinctions between employment and unemployment blur as boundaries shift.

These changes have been instrumental in the development of Transitional Labour Markets (TLMs)[5]. Having altered the nature of the relationship between employers and employees, TLMs require PES to adopt new approaches to support labour market transparency.

PES will need to ensure that these more frequent transitions are well managed, working with partners to bridge skills gaps. In a world of increasingly frequent transitions and TLMs, as described by Brzinsky and Fry (2010), the PES mandate will need to evolve from traditional job matching into career management. De Vos et al. (2016) have described a change from the traditional idea of careers as linear, predictable and single lifelong employment within one organisation. Acquiring new skills becomes essential and the nature of skills required continues to change as the labour market evolves. Despite this, research by ETUC

(Voss and Riede 2018) has found only 10% of people receiving appropriate training, though a skilling revolution is needed.

The aim must be to maintain employability for clients through applying Sustainable Career Management. This was defined by De Vos and Van der Heijden (2016) as ensuring that "Careers are ultimately owned by the individual and affected by the total person's life context which is dynamic and not always easy to predict". Preventing unemployment therefore requires labour market attachment to be maintained through effective and sustained career management.

Employers have an important role as partners in an effective Career Management strategy with responsibility for helping employees to stay employable. They should seek to renew and not replace their workforces as part of adaptation to technology-driven organisational change. Identifying a need for a much greater focus on this, Ball (2018) observed a lack of dialogue within companies, the need for analysis of the workforce and workplaces within companies, and missing age management strategies.

Eurofound research (2015) concluded that there were two key elements to sustaining work: the characteristics of the job and the characteristics of the individual. Therefore, sustainable work includes maintaining job quality as well as employee well-being.

The threat of unemployment through technological changes is likely to particularly affect groups typically facing greater barriers to labour market integration: the low skilled, people from ethnic minorities, migrants, young people, women and older workers. Regarding the latter, age management increasingly features in career management initiatives. Walker (2015) partly attributed ageing workforces to increased life expectancy and declining fertility rates, Eurostat data records a 4.3% increase in the age dependency ratio[6] (to 29.3%) over a decade to 2016. Walker however found, despite more statements about positive age management, a deficit in investment in and support for older members of the workforce. Wallin (2015) defines effective age management as the management of

[5] Concept of transitional Labour Markets https://www.bibliothek.wzb.eu/pdf/2010/i10-507.pdf

[6] Age Dependency Ratio – number of dependents in a population divided by the number of working age people.

organisations' productivity and human resources in a way that acknowledges employees' resources during their individual life courses.

The work of the High-Level Expert Group (HLG) on the Impact of the Digital Transformation on EU Labour Markets supports the proposition that the reduction in the overall number of jobs from automation may not be particularly high, but notes that changes in work will be very significant[7]. These will require workers, and especially younger people, to cope with substantial changes, including reconfiguration of the nature of tasks performed within occupations. This will need substantial investment in training and reskilling, an understanding of the complex interrelationship of factors deriving change, and attempts to assess the impact of digitalisation and automation on both companies and workers. It will also be necessary to address technological anxiety and broader mental health problems stemming from the less stable employment patterns that are likely to feature in future labour markets.

Social protection systems are invariably based on policy assumptions reflecting traditional modes of employment in industrial societies, especially lifelong secure employment with one company.

These will need to be reviewed, and in some cases significantly reconfigured, to account for changes such as the development of flexible platform employment. This will be essential for welfare support systems to continue to provide an appropriate balance between supporting people looking for work and ensuring labour market incentives.

Current structural changes in the labour market have led to labour shortages; measures to address these must prioritise specific policies for integrating excluded groups. The PES Network[8] mandate includes specific requirements to contribute to reducing unemployment for all age groups and for vulnerable groups, as well as reducing the duration of unemployment and inactivity to address long-term and structural unemployment and social exclusion. PES have an important role to play at the centre of an ecosystem of support services which need to work in concert to prevent unemployment caused by labour market transitions. They need to develop systems which enable joint working with other actors. These include Education and Training/Skills organisations, Private Employment services (PrES), and especially employers with SMEs requiring financial and technical assistance.

STRATEGIC CHALLENGES, APPROACHES, AND RESPONSES FOR PES AND STAKEHOLDERS TO PREVENT UNEMPLOYMENT

Future skills needs

Effective forecasting to tackle skills gaps is an essential component of activity to match supply and demand and prevent unemployment in an era of increasingly rapid labour market transitions. Individual stakeholders have not, in most cases, designed specific data collection activities and currently mostly rely on rather traditional prediction methods. Much better use needs to be made of existing administrative data to improve skills prediction. Data collection methods will need to be enhanced. Employers and jobseekers require access to the most up-to-date and relevant labour market information (LMI) to inform their decisions.

Eurofound research (2018) reports that 54% of the current working population will need to adapt their qualifications in an environment characterised by increasingly frequent transitions and where the content of work is changing. Employees will seek secure transitions, which will occur more often if they are suitably qualified

[7] Report of the High-Level Expert Group (HLG) on the impact of the digital transformation on EU labour markets, April 2019. https://ec.europa.eu/newsroom/dae/document.cfm?doc_id=58412.

[8] Decision No 573/2014/EU of the European Parliament and of the Council of 15th May 2014 on enhanced co-operation between Public Employment Services (PES).

with the required skills and competencies to take advantage of available opportunities. Anticipating which of these will be of most use in matching future skills demand will need existing evidence to be exploited to its full potential.

Skills suitability must be considered against two dimensions: sectoral and geographical fit. Basic skills will continue to be important, in many cases less of a premium will be attached to specific knowledge, and more emphasis and importance placed upon competencies such as problem-solving and teamwork.

Extrapolating past trends into the future is no longer viewed as a particularly robust method for predicting future requirements. There can however be advantages in applying a mix of techniques and approaches including forecasting, big data analysis, and econometric forecasts.
As a demand for new skills is expected to emerge from technological developments, change methodologies will need to recognise that analysis of past changes will often reveal little about the characteristics and requirements of new occupations.

Progress in skills identification at the European level has enabled the collection of granular data on the skills mix of particular occupations as well as detailed analysis of both how the occupational structure of the labour market has changed and how it will probably further evolve in the short to medium term. However, improved systems have themselves generated further challenges.

In order to offer the quality of guidance which clients require to enable effective prevention, PES will need even more granular data rather than the aggregate level information often currently available. Whilst big data offers significant potential, further work is needed to ensure that it provides sufficiently representative data samples, especially for use in informing skills policy development. Analysis of skills mismatches remains a subject in need of further investigation, specifically identifying the extent and characteristics of mismatches to support skills prioritisation.

In many instances, classification systems such as ISCO[9] are lagging behind the development of new skills needs in growth sectors, and there is more scope to distribute information to optimise the impact upon labour market actors.

The O*NET[10] system in the United States offers highly disaggregated information on the skill content of occupations; the ESCO[11] system, in development with the European Commission, offers similar potential.
The essentially backwards-facing nature of administrative data, and sometimes lengthy time lag in updating classifications, presents obvious limitations in prioritising interventions to meet skill needs. Dierdorff E et al. (2009) report some success in the USA in identifying Green Jobs which do not feature in the current US-SOC[12] .

PES counsellors are crucial intermediaries in the provision of information on skills anticipation. There are still considerable challenges in presenting information in user-friendly formats which are easily accessible for PES staff to use in their guidance activities.
The UK **LMI for all** initiative enables significant volumes of government-collected data to be accessed through a portal, making it available to any guidance services wishing to utilise this in order to develop their own applications.

The **German PES "Merger Profession"** uses statistical analysis of clients' original profession, occupational training and "destination" job to gather information on "placement fit", market opportunities, and the transferability of skills.

Anticipating skills needs requires PES to work with employers, education and training institutions, and research organisations to share data on labour market trends and conduct statistical analysis. This is required to provide the best possible guidance to clients and support for employers needing to retrain and recruit suitably skilled staff to manage transitions driven by digitalisation and automation of processes.

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[9] ISCO –International Standard Classification of Occupations www.ilo.org/public/english/burteau/stat/iscoof.

[10] O*NET https://www.onetonline.org.

[11] ESCO – https://ec.europa.eu/esco.

[12] US-SOC https://www.bls.gov/soc.
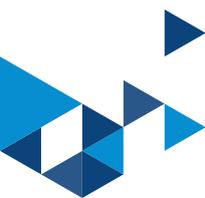
Prevention for active people: training and up/reskilling

In order to design and deliver training to equip people to meet future labour market transitions, providers need access to skills forecasting tools. Applying these can be complex as, in many cases, elements of jobs rather than entire occupations will become redundant through automation. A further complication is that occupational classifications used in forecasting methodology necessarily only cover existing functions. However, despite these potential obstacles, trends can normally be identified, especially as real-time information is not required, and a core of significant numbers of jobs will remain unaltered.

Notwithstanding the availability of techniques for skills prediction, the increasing body of research describes multiple changes in occupational design. Changes are predicted between and within sectors, within individual companies, and within and between occupations. Studies including Suta, Barbieri, and May-Gillings (2018) and Nedeloska and Quintini (2018) suggest that, in order to assess the impact of technological change on job design, it is necessary to disaggregate tasks and activities. Coherent strategies are needed to link skills identification and training across sectors and between stakeholders.

Digitalisation through automating a function typically reduces labour inputs and demand and alters the structure of job roles and organisational processes. At the same time, the technological enhancements altering the nature of specific job roles are generating new skills requirements. Programmes promoting employment in "bottleneck" jobs can pay dividends in placing jobseekers, especially where demand is growing or cannot be met by available supply.

Preventing unemployment in this context involves PES and other actors in upskilling and retraining existing workers and ensuring that vocational and technical education curricula are regularly amended to keep pace with technological advances. Modular training programmes, combining classroom study with practical on-the-job experience, can be particularly well-suited to the needs and aspirations of young people.

In order to successfully deal with the consequences of automation and digitalisation, PES will therefore need to provide support for new target groups with varying skill levels and upskilling requirements. This will involve a new intervention logic, necessitating revised customer engagement strategies involving an enhanced partnership agenda. Skills identification mechanisms will need to be updated with revisions to the content of training programmes, and the most appropriate funding mechanisms will need to be identified.

It will be increasingly important to encourage autonomy and adaptability amongst PES clients to allow them to compete in a faster-changing labour market. As such, new systems for capturing customer requirements and preferences, (possibly voucher schemes) will need to be considered.

Clearly, there is a strong logic in programmes to prevent unemployment during times of profound structural change focusing on upskilling people in potential growth sectors. PES will need to be active in identifying sectors and occupations at both the local and national level subject to technological change. This will be essential in order to inform decisions which can prioritise funding to assist people being displaced by technological changes. Successful PES training strategies will have to ascertain the best balance between short term upskilling and longer-term vocational retraining.

Partnerships between employment and training organisations and the IT sector necessarily feature in the approaches adopted in many MS. Experience from preventative activities commissioned by PES and their stakeholder partners shows that they must address two specific issues: deadweight effects and a lack of commitment from potential industry partners. PES has dealt with these by prioritising the targeting of training programmes to ensure that as many clients as possible receive support and added value to increase their future labour market prospects which would not be forthcoming from other sources. PES have also developed carefully designed and targeted incentives for employers to co-operate in the design and delivery of skills development and training initiatives.

The **Work and Study Programme** in Estonia targets people with obsolete skills or with no vocational or professional qualification. Workers on below-average incomes have access to voucher schemes, whilst employers can apply for training grants to assist in restructuring and the development of technology requiring new skills. A German subsidy programme (**WEGebAU**) seeks to address issuers in smaller firms through targeting low skilled workers in SMEs.

The Belgium (Flanders) PES does not restrict eligibility to specific employee groups but varies financial incentives according to target groups perceived needs.

A 2019 study of the German Ministry of Education and ESF-supported **Bildungspramie** (Training voucher for continuing training) scheme noted its success since 2008 in meeting client needs through providing vouchers with increased value in proportion to greater skills deficiencies. The benefits of counselling and advice for employers as well as employees were also noted.

Various initiatives have been successfully linking school and post-school guidance. The Scottish Government Agency **Skills Development Scotland (SDS)** is a unique example, involving schools career guidance, young adults labour market placement, and skills development within enterprises. SDS worked with 206,000 school students in 2016/17.

An Austrian initiative to prevent long-term inactivity, **Jugendcoaching,** organises preventative and outreach programmes. Coaching programmes for young NEETs and school dropouts have been delivered by both professional school staff and external coaches since 2013. Austria continues to experience reducing school dropout rates.

Language barriers can present profound difficulties in connecting to the labour market, for migrants especially and for disadvantaged groups in general. The French PES pioneered a programme of Simulation Recruitment in this regard.
Starting in 1995, this system enables candidates who lack the capacity to speak or write fluently about their experience to display this in a series of simulation exercises.

To offer support in preventing unemployment, PES must reconsider their own training agenda, modernising curricula and ensuring that services are available online. In the changing world of work, flexible delivery is a further key component of modern training agenda so modular courses must be offered. A comprehensive approach to preventative and up/reskilling activities will need to address the needs of people not yet affected by digitalisation, and without the skills to access digital training which can pre-empt future problems.

Prevention for active people: career guidance

Though some PES have well-developed career guidance services, so far none are part of comprehensive lifelong guidance systems. Not all of these have access to the most up to date information or advanced skills prediction tools. Others are almost exclusively focused on traditional matching with no focus on longer-term career development or sustainable labour market attachment.

Given the changing world of work, PES advice and counselling direction and matches will increasingly need to be "future-proofed".
Ideally, each integration will form but one link in an unbroken career trajectory. The role of guidance will therefore be transformed increasingly, needing to meet the needs of both employed people and jobseekers. Research by Cedefop (2016) highlights the scale of the upskilling challenge across the EU, reporting 46% of adults as having low education, digital, and cognitive skills, or obsolete skills.

To address this situation, PES and other actors will need to adopt a pro-active strategy. It will be no longer sufficient, or in many cases appropriate, to react to labour market signals, as opposed to actively intervening to assist those whose jobs are most at risk from restructuring.

The role of PES will increasingly encompass job-to-job changes and the management of transitions. This should include skills validation and working with employers to assist them with the delivery of HR and skills development policies. Skills needs data can provide extremely useful information to assist peoples' career decisions. It must be analysed with other data such as vacancy information, and studies of longer-term employment outcomes for people pursuing specific training courses. Support offerings should be flexible, including long-term assistance as needed, and should be available through a variety of channels. Online assistance should form an important part of the packages, though it is vital that the needs of the most vulnerable are accommodated, including through the provision of intensive face-to-face support as needed.

Close co-operation between employment services and education providers is especially important in delivering career guidance which reduces the

risk of unemployment. Client-centred career guidance should link actors from these sectors, where possible facilitating development of online data portals, bringing together information, with services delivered through one-stop (both physical and virtual) gateways.

The future PES roles will need to accommodate greatly increased outreach, especially to the currently unregistered. Close PES collaboration with the education sector will be essential to facilitate more successful school-to-work transitions (STWs), encourage voluntary geographical mobility, promote longer working lives, and support career transitions across the employment life cycle – including active support for lifelong learning agendas.

For some clients, maintaining employability and career resilience could involve transitions to self-employment. To meet this requirement, PES and others will also need to be equipped to offer support and advice on opportunities to foster and develop entrepreneurship.

Some PES now have well-developed vocational and career guidance services – notably Germany (including an online tool **KursNet**), Finland (which has extended its integrated one-stop **Ohjaamo** service model with the inception of client-centred outreach, especially targeting harder-to-reach vulnerable groups) and Croatia (where the PES has established a parallel nationwide network of citizens Career Informing and Counselling, **CISOK centres**).

The European PES 2020 model[13] referred to the importance of developing career management services and tools. The increasing influence of external (mega) trends such as globalisation, ageing populations, urbanisation, migration, automation, and technological change (e.g. AI) has presented PES with the task of developing responses to changes over which it has no control. Consequently, PES have faced new internal pressures from what has been described as a VUCA[14] external environment. Especially significant amongst these are changing client

groups, a labour market dynamic increasingly requiring successful management of skills rather than traditional occupational transitions, and an ongoing need to update and better exploit LMI.

Adapting to meet these challenges will enable PES to develop the potential from promising developments to establish comprehensive lifelong guidance systems. The inception of the European Employment Strategy[15] , and the European Semester Process[16], with European Employment targets, has provided a policy frame which can foster more cohesive responses to prevent unemployment from changes in the nature of work. However, the variety of institutional settings, centralised models as in Germany, regional structures as in Italy and Spain, and municipal organisations as in Denmark, means that inevitably key decision-makers will need to respond in different ways to enable the development of systematic cross-cutting support services.

There is a potentially equal or even more significant implication from the different mandates and employer/client engagement approaches of European PES. Heckman (2016) has noted a potential conflict between longer-term human resource investment and a focus on short term placements. The German PES is unusual in prioritising preventative activity and intervening to support upskilling and redeployment activities for those at risk of losing their jobs, including through automation. A set of factors, including national legislation requiring employers and employees to engage with the PES in pre-redundancy situations, the significant degree of autonomy in the PES operating model, and its ability to utilise insurance funds to mitigate risks of long-term unemployment, have combined to enable a proactive policy.

PES will need to provide a gateway to lifelong learning and an entry point for periodic transition management which will increasingly be a feature of the future characterised by Transitional Labour Markets (TLM)[17] . Successful career management partnerships will involve employers, in providing job opportunities in growth sectors – including

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[13] EU PES Network (2011) Strategy to 2020 https://ec.europa.eu/social/BlobServlet?docIdd=96690&langId=en.

[14] VUCA, Volatile, Uncertain, Complex and Ambiguous.

[15] EU Employment strategy (1997) https://ec.europa.eu/social/main.jsp?catId=101&langId=-en.

[16] EU Semester https://ec.europa.eu/info/business-economy-euro/econmic-and-fiscal-policy-coordination.

[17] TLM Theory considers labour markets to be social institutions supporting freely chosen career paths over a life cycle.

intern and traineeships; education and training institutions delivering technical and skills training; unions in contributing to fostering a lifelong learning culture; and PrES and Temporary Work Agencies (TWAs) able to supplement PES vacancy databases.

PES Benchlearning, with its emphasis on sustainable activation and management of transitions[18], offers a strong unifying theme which can drive all MS towards addressing lifelong guidance needs, irrespective of their disparate starting points and institutional arrangements.

ICT in prevention activities

ICT is a key enabler for both PES and their customers. PES are currently reviewing the balance between automated and traditional "face-to-face" services when considering how best to design, adapt, and deliver preventative measures. PES and other actors already acquire and store a rich body of data on their customers. Further investment in ICT capability can enable more intensive exploitation of data which can be used to design increasingly personalised, bespoke, client-focused support packages, monitoring client career and integration trajectories. Such systems can incorporate real-time updates from users, as well as significant functionalities for client input and self-appraisal. More advanced data integration and analytics can allow for increasingly sophisticated assessments of individuals' employment potential. It can explore clients' prospects on current, and with the input of skills prediction methodologies, future labour markets.

Exploitation of big data and Artificial Intelligence (AI) presents challenges for PES, not least in dealing with the implications of automation for its own internal operations and staff. However, there are clearly significant opportunities to develop more tailor-made services. Longitudinal studies utilising administrative data are being increasingly used to monitor career trajectories.

Online service provision can considerably increase the accessibility of services, increasing flexibility for customers. This is of particular use to certain client groups e.g. employed customers, and where unit delivery costs are reduced, with the inception of more online service provision, resources can be redeployed to support more intensive face-to-face assistance for those requiring it, especially previously inactive people.

A number of particularly significant immediate issues face PES in optimising the potential from ICT to prevent unemployment. Amongst these are securing up-front investment to develop new IT systems, dealing with data protection issues, and considering ethical questions. Many of the latter are now being posed with the development of IT systems with greatly enhanced processing capacity, data storage and retrieval capability. PES will need to make decisions on the access that should be granted, and use made of jobseekers' personal information.

In an increasingly digitalised world, systems to prevent unemployment are clearly dependent upon modern technology. PES vary considerably in the extent of their current access to modern ICT enablers to support their activities. Several PES have outdated IT systems and limited or non-existent data integration. When combined with administratively cumbersome and paper-based systems, this places considerable restrictions on staff's ability to effectively intervene with clients. In some cases, even when the practical technological enablers are in place, a lack of legal permissions hampers the ability to design and operate connected services.

Except for Germany, PES depend on workers volunteering information about possible redundancies. Even where legally permissible, PES utilisation of information on clients' job search behaviour is still uncommon, though some, notably the **Belgium (Flanders) PES** are now introducing processes to enable this. In this case, job search data, including from clients' "click" behaviour, allows individualised reintegration strategies and plans to be developed.

Where administrative and legal issues have been resolved, PES need to acquire the necessary resources to invest in the procurement and development of IT systems and training and upskilling programmes for their own staff.

Since 2014, the **Swedish PES co-browsing**

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[18] European Commission (2017) Benchlearning Manual of the EU PES Network, Brussels https://ec.europa.eu/social/BlobServlet?do-cId=14106&langId=en.

package of "personalised online support" provides real-time assistance through browsing, chat, and audio-visual facilities. This has allowed for the delivery of efficient service delivery, as a counsellor can simultaneously engage with several clients, and the tool can be targeted at clients whose characteristics indicate that they are most in need of assistance. High rates of customer satisfaction and levels of accessibility to potentially marginalised people, such as those from migrant communities, have established the system as an effective tool for preventing unemployment and inactivity.

Communication about prevention measures

The potential from the effective use of ICT in communication campaigns to influence changes in job search behaviour should be recognised.

Employee upskilling programmes do not always attract as many clients as expected; this is at least partly due to poor communication. When many workers face the prospect of becoming redundant due to technological changes, it is especially important that clients are both aware of potential support for re/upskilling and also encouraged to take advantage of these opportunities.

Clear messaging and effective communication about preventative measures are important tools to be used to prevent technological changes causing unemployment. Nedeloska and Quinti (2018) identified a paradox in that those citizens most in need of assistance to cope with transitions are often the least likely to seek assistance.
The content of messages and the way that they are delivered necessarily has an impact on how they are received. As different stakeholders can bring expertise to re-integration activities, the roles and responsibilities of different partners should be clarified at an early stage. Messages can be most effective when they have been developed following dialogue between a group of stakeholders.

As a minimum, messages aimed at different customer segments should be developed, with more personalised communications addressing identified individual needs where possible. Feedback from target audiences on communication campaigns should be systematically gathered and used in conjunction with other market research material to inform periodic reviews of communication strategies and campaigns.

It will be especially important to determine the optimum balance in aiming communications between employers and employees.

So that gaps can be identified, existing access to information should be reviewed and baselined as a first step in the development of communication campaigns. Increased participation in preventative activities is the desired outcome from communication campaigns, helping to direct clients to that information most pertinent to them from the vast amount of available material.

The development of personalised communication plans can increase the effectiveness of messaging designed to meet an individual's needs.
This requires an understanding of individuals' motivations, aspirations, and a comprehensive assessment of the range of preventative opportunities available to them.

PES have a pivotal role as guarantors of prevention which they undertake in conjunction with other stakeholder partners. The aim of individualised support packages should be to encourage jobseeker autonomy, itself one of the most important attributes necessary for success on the labour market in the changing world of work.

Making the intended target audience aware of reskilling opportunities is also especially important. This can itself be a particular challenge for sections of the population already experiencing exclusion, or possibly most at risk of this.
They are often those who least frequently respond to or even receive messages sent through traditional communication media. Kramer and Tamm (2018) found that higher-skilled staff tended to undertake more training during their working life than lower-skilled ones.
PES has responded to this challenge by both developing awareness campaigns in concert with partner organisations or encouraging partners to design and deliver campaigns themselves under their own branding.

Successful initiatives have recognised the need to connect with informal and local networks, particularly those of young people, especially NEETs. Taking the message directly to the target population has proven to be productive in several countries. PES and their partners have used places where young people meet, such as sports clubs, other facilities they may frequent including

fast food outlets, and public transport systems they use, for example metros, as locations for advertisements. Some **PES, notably Estonia,** increasingly make use of television and radio, social media, and direct personalised marketing, including mailing and telephone calls, to contact potential programme participants.

The **Cite des Metiers (CDM)** programme for hard-to-reach young people in Brussels has developed a communication strategy with two channels. It develops its own media strategy and campaigns and encourages partner organisations such as youth services and social services to use their own networks to publicise CDM.

Such innovative approaches have increased the coverage and accessibility of messages to target audiences. Altmann et al. (2018) found that those most vulnerable to LTU were the most positively affected by the provision of information on the state of the labour market, and that in certain cases the likelihood of positive responses was enhanced where non-government bodies were "the face" of integration campaigns.

Involvement of big companies and SMEs

Large companies are normally expected to be the first employers to adapt to and introduce new technologies, and they are major training providers. SMEs, though major providers of jobs, have less, and sometimes very limited, capacity to partner in prevention initiatives.

Companies therefore have differing capability, or sometimes motivation, to provide employability services or to participate with PES in recruitment and training initiatives. These include subsidised employment schemes, work trials and internships. Improving co-operation between PES and companies is of importance in the current rapidly changing labour market, especially preventing unemployment from redundancies driven by increasing automation.

Employers face dilemmas as to how many resources to invest in upskilling and career development especially when the skills acquired for employees are not company-specific and transferable to sector competitors in tight labour market conditions.

Technological change and contingent shifts in labour market dynamics, especially in the nature of employee/employer relationships, mean that PES must introduce new ways to deliver their core function of supporting labour market transparency. In order to accommodate more frequent and diverse transitions, PES have evolved fresh approaches to employer engagement, including establishing dedicated employer engagement teams.

Assisting clients to access and maintain quality jobs will require PES to help jobseekers bridge skills gaps. This will enable employers to utilise labour from a pool of skilled recruits in order to benefit from the advantages of harnessing new technology and accessing new markets.

PES face challenges in meeting employer needs with unmet demand for new skills, and an ageing workforce, whilst meeting the up and re-skilling needs of those socially excluded clients farthest from the labour market.

The fundamental and intrinsic changes occurring within companies in the context of the 4th Industrial Revolution has necessarily altered the dynamics of the relationship between PES and employers. The paradox of continuing long-term unemployment and social exclusion in parallel with continuing and, in some sectors, growing skill shortages has presented opportunities as well as challenges for some PES.

PES in Malta and Belgium (Flanders) are working in partnership with NGOs to promote **Job Carving** (Scoppetta, Davern and Geyer 2019). Specialist organisations are offering consultancy to companies enabling more routine components of skilled workers jobs to be "carved", creating open labour market opportunities for people who might otherwise face long-term inactivity or only be able to access opportunities in sheltered workplaces. This has enabled increased earning potential and greater prospects for advancement.

As the rate of labour market change increases, the process for deciding the content of training and upskilling programmes has needed to become more flexible and responsive to employer demand. The Walloon **PES in Belgium** works with the regional government, training providers and employers to design and deliver training programmes through **Skill Centres**. These facilities seek to draw on the most up-to-date labour market signals from employers to focus future provision on meeting growing skills needs
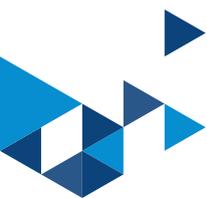
and investing in preventative programmes. The aim is to facilitate redeployment through equipping people whose skills are becoming obsolete so they can transfer to new roles in their companies.

A very important consideration is that PES themselves adopt internal strategies which ensure that they keep pace with changes in the world of work so that they can continue to serve employer and jobseeker customers. The French PES has adopted a digital strategy to ensure that staff have the tools to engage with customers online, and employers and jobseekers are able to take maximum advantage of automation to offer efficient access to vacancies and training opportunities.

Mapping of responsibilities

The World Bank (2018) has commented that workers with higher levels of adaptability and more skills are most likely to benefit from opportunities from the changing world of work, while less skilled and less adaptable people may be more vulnerable to the risk of unemployment through displacement or falling into lower-skilled employment.

Several actors are part of the support system to assist people in dealing with the consequences of technological change, with PES at the centre of the process. PES operate daily on the labour market, intervening to help redress market failure and must therefore update and transform their services to deal with labour market challenges.

Key PES responsibilities include providing a gateway to lifelong learning, supporting effective job-to-job transitions, and enhancing the employability of people seeking to or possibly being required to seek new employment. Ongoing technological change means that the PES remit will increase. In future, it will need to incorporate prevention, skills anticipation, closer partnerships with education and training providers, and assisting employers to manage transitions in tandem with career guidance for clients. The role of PES counsellors will evolve to reflect the organisations' new range of responsibilities and changing customer bases.

All actors involved in providing this career attachment service will need to be clear as to their specific responsibilities. Co-ordination will be essential so that not just employment services, but also education and skills development, and companies internal training programmes, are adapted to meet changing client needs.

Alignment between stakeholders liaising through both informal and formal partnerships, where possible building upon existing social dialogue mechanisms and skills governance systems can provide a support structure for more effective transitions. This engagement will be needed so that stakeholders can establish a common vision. It will be necessary to create an environment where all actors are clear as to their own responsibilities, and can optimise their input to the collective agenda so that the "whole can be greater than the sum of the parts".

Effective communication is vital to ensure that all partners have a shared perspective and understanding, not just of their responsibilities, but also that of other organisations. All stakeholders must be aware of how their specific areas of expertise and competence feed into and add value to the bigger picture.

In order to maintain collective "buy-in", it is important that the overall re-integration strategy is both developed with input from all partners and focused upon shared goals relevant to all of them. Organisations should align their business plans and models to minimise inter-agency friction and identify joint priorities which can be pursued to embed a shared longer-term perspective.

The legal basis for partners' co-operation should be examined and data sharing protocols and ICT compatibility reviewed. Where issues such as resource constraints and individual partners' competing priorities present barriers to effective co-operation, top-down direction from the centre of governments may be needed to set the context for effective stakeholder engagement. However, this cannot succeed without appropriate shared interests and commitment at a local working level.

There are significant overall benefits for clients from more integrated services, these include multiple access points, greater support coverage, and ability to provide increasingly tailored services, delivered through more effective and efficient resource allocation.

An important aspect of successful partnerships is ensuring that participating organisations share

a common vision. PES can use existing social partnership machinery to foster a set of common objectives for re-integration initiatives and ongoing co-operations. Capacity building is an important dimension for fostering robust closer working structures and is especially necessary for many NGOs. The European Employment Committee (EMCO) has produced a set of guidance on quality standards for the integration of services for LTU people[19]. This elaborates potential advantages from increasing inter-agency cohesion, and budgetary co-ordination and pooling to increase overall levels of capability for re-integration services. Similarly, MS taking advantage of opportunities through using the Open Method of Co-ordination (OMC) can enable joint formulation of objectives and develop the potential for benchmarking to assess progress.

When developing partnerships to prevent unemployment, PES will need to increasingly consider adapting their service offerings to consider new client groups. The traditional PES focus on matching the unemployed to vacancies will be increasingly superseded by work with employed people at risk of redundancy. There will also be increasingly close co-operation with employers to support and collaborate on redeployment programmes. Studies, including by the Inter-American development bank (2015), point to the need to adjust employability initiatives to consider the varying needs of employees of different ages. The demographic dimension with ageing workforces has also been identified by Khatiwada and Maceda Veloso (2019), noting the issues of redundant skills faced by some older workers and their greater difficulties in adapting to more ICT-dependent processes in the workplace.

PES will have a shared challenge in working with partners to identify at-risk employees. Csillag and Scharle (2019) have noted that workers with lower levels of education are more likely to be deployed in routine tasks that are especially open to automation. Voss and Riede (2018) have found older workers to be the group most likely to be displaced by automation. In order to address these challenges, partnerships with employers and employers' associations will need to identify at-risk groups and potential skills gaps. Trade unions can promote up-reskilling programmes amongst their members. All partners have a role in consideration and determination of policy on financial compensation for those displaced and retraining during labour market transitions.

Given the significant and in certain areas essential role NGOs and not for profit organisations play in the integration of LTU and socially excluded people, it would be prudent for future studies to explore how their expertise can be channelled to address challenges of preventing employment from technological change. The current impact and potential of these actors to influence the agenda remains an under-researched area.

As the number and complexity of factors impacting labour market transition increases, PES must develop effective partnerships with other key stakeholders to prevent unemployment. The mapping of responsibilities is therefore crucial so that all actors can add the most value to these arrangements. They must seek to eliminate both duplication and gaps in service provision, and, as far as is possible, present a seamless service to clients.

Young people transitioning to employment

Structural labour market changes particularly affect young people. Transitions, especially from school to work (STW), need to be effectively managed to prevent young people from falling into long-term unemployment and inactivity. Therefore, awareness of the impact of labour market changes on transitions and what can be done to ease these are crucial tools for employment services and educational institutions. Actors need to cooperate to exchange information on labour market needs. Educational and training curricula need to be balanced between specific technical and transversal (soft) skills.

The Youth Guarantee[20] remains a vital policy instrument to assist young people's successful labour market integration. 3.5 million (of 5 million) unemployed young people took up an offer under the Guarantee in 2018. An intensified focus

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[19] PES Network proposal to EMCO Indicator Framework for monitoring the Council Recommendation on the integration of LTU people into the labour market 12493/16 ADD2 30/9/2016.

[20] Council Recommendation of 23rd April 2013 on establishing a Youth Guarantee (2013/c 120/01).

and stronger emphasis on outreach have been identified as necessary to engage with young people, especially NEETs, encouraging them to register with PES in order to access available support programmes.

An EU review of the Youth Guarantee (European Commission 2018c) found that whilst all MS face challenges concerning young people's skills, specific skills-related challenges were strongly influenced by macro-economic and structural factors. The lack of job-specific vocational skills and experience was increasingly related to supply rather than demand-side factors and a mismatch between the supply and demand of skills (especially STEM/ICT) for available jobs. The study found that there were significant differences in the challenges faced by young people according to skill levels and/or other characteristics of disadvantage. Insufficient or absent co-ordination between employment, social, and education support services was especially relevant.

Young people particularly face challenges from increased precariousness and adapting to changing skills needs, with the scale of this problem varying between countries. Combatting this through successful transitions can include offering academic and social as well as vocational support. Developing motivation and life skills can be an important aspect of the successful integration of young people. Short, company-focused training can be an especially effective route to employment for young people.

The European Council Conclusions on Young People and the Future of Work stated that it was vital that young people are assisted to deal with technological changes. The EU study on the Youth Guarantee in the light of Changes in the World of Work (European Commission 2018b) noted problems faced by young people due to insufficient co-ordination of employment, social, and education support. The report also referred to reforms in some MS to improve the labour market relevance, quality, and attractiveness of vocational and employment training (VET).

Such initiatives reflect the conclusions of a 2010 OECD/G20 study that young people's career prospects in the changing world of work are best protected by doing everything to prevent young people dropping out of school, promoting a combination of work and study, and offering all the opportunity to pursue "second chance" qualification.

Support for NEETs is a specific objective of the PES Network. A study of YG implementation (European Commission 2018c) attributes the success of Austria in youth employment to good PES co-ordination with strong co-operation between service providers, flexible training, and positive employer attitudes. It also noted the importance of service customisation and a reasonable balance between resources and outputs. The study also highlights progress in Portugal, particularly noting the improved availability of information with systems produced by the PES in partnership with the ILO, including an enhanced web-based platform.

Of special relevance to the prevention of unemployment for young people is the Skills Agenda for Europe , adopted in June 2016. This includes the European Framework for Quality and Effective Apprenticeships , which aims to increase the employability of young people. It stresses the need for tracking young people's progress, career guidance, effective partnerships between support services, and the advantages from (especially work-based) training. A Recommendation on Key Competencies for Lifelong Learning (2018) aims to better prepare people for changing labour markets, especially through fostering the development and acquisition of competencies, particularly ICT skills. The Digital Skills and Jobs Coalition brings companies and education providers together to enhance digital skills beyond IT professionals.

Academic and social as well as vocational support can be needed for successful transitions. The **Danish PES** has found that for many young people who have dropped out of education and

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[21] Draft Council Conclusions on Young People and the Future of Work Brussels 29 April 2019, 8754/19.

[22] A New Skills Agenda for Europe Communication from the Commission to the European Parliament, Council Economic and Social Committee and Committee of the Regions COM (2016) 381 final 10/6/2016

[23] Council Recommendation of 5th March 2018 on a European Framework for Quality and Effective Apprenticeships (2017 13161/17).

[24] Council Recommendation of 22nd May 2018 on key competencies for life-long learning (2018/c 189/01).

[25] Digital Skills and Jobs Coalition https://ec.europa.eu/digital-single-market/eu/digital-skills-jobs-coalition.

training, ensuring that they can acquire sufficient academic and social skills is key to an eventual successful transition to labour market integration. The **Building Bridges to education programme** offers people aged 18-29 a 3-month support programme to provide them with the necessary foundation to complete the educational courses necessary to enter training and then get a job. The academic modules provided are tailored to encourage participation from the target group. Short internships and a mentor are key components of this programme and of great benefit to participants. Clients are therefore assisted with both training and support to increase their self-esteem. The intention is to introduce self-belief amongst clients that they have the tools to succeed in their education first and following this to successfully train and integrate into the labour market.

Short, company-focused training can be an effective route to employment for young people. The **"Generation" project** established in Spain, Italy, France and the UK aims to enable successful career launches for all young people. It offers short training focused upon specific skills needed by partner companies, which are then more likely to hire people from the scheme. Employers are engaged from the very start of the programme design. The training includes 4-12 weeks of technical, behavioural, mindset and professional skill training, with social support services provided in parallel. Mentorship programmes follow the graduates in their workplaces. A similar programme – Regeneration – seeks to provide the same service for people aged 25+ who need retraining after a period out of the labour market due to changes from automation.

CONCLUSIONS AND RECOMMENDATIONS

Technological change through automation and digitalisation is driving extremely profound changes in the nature of work. Substantial alterations in working patterns are inevitable, and consequently, without access to well-designed and continually evolving support systems, large numbers of citizens are at risk of unemployment with these significant changes in the world of work.

However, the 4th Industrial Revolution, like its predecessors, is likely to offer many opportunities in new occupations. The need to respond to "mega trends" will also drive employment growth. Climate change will facilitate growth in the green economy, demographic change with ageing populations is expected to engender a great increase in care sector employment.

PES are key labour market actors who will continue to be at the centre of the support ecosystem needed to ensure smooth transitions in an ever more dynamic labour market. PES themselves will be similarly impacted, like other organisations, significantly by process automation and the continuing growth of digital service delivery systems. These issues will combine to require a large-scale re-orientation of the PES mandate and service delivery model.

New customer groups will need assistance, more customers will be served online, increasingly through self-service, whilst there will be an increasing demand for intensive, personalised support for the socially excluded people who will require, sometimes long term, assistance, for labour market integration.

Whilst PES will continue to have a pivotal role, institutional demarcation lines must be challenged and where possible removed, enabling service delivery partners and employers to co-operate in joint initiatives. Stakeholders will need to act as part of a wider ecosystem where all make contributions which avoid duplication and add the most value in individual cases, based upon their specific expertise and remit.

These partnership arrangements will need to provide a framework for lifelong career management supported by greatly enhanced exploitation of LMI, with much more sophisticated data integration, involving AI and predictive analytics.

PES will need to continue to develop outreach and to offer flexible, especially online training, particularly for employed persons. In order to develop lifelong guidance, it could be a significant advantage if PES, as part of fostering wider co-operation, worked with partners to become a national reference point for predicting skills needs.
PES will need to maintain a channel mix to ensure that all cohorts are supported and ensure that their own staff are suitably skilled to operate effectively in a more complex and increasingly digital environment.

The EU policy framework for employment and skills continues to develop as an enabling influence, setting the context for necessary evolution in the role of PES and other partners. A continuing priority on the issues addressed in this paper, including further research and mutual learning exchange, will be a key component in the continuing essential task to prevent unemployment in the future world of work.

Annex – Promising practices for the prevention of unemployment

Annex 1 - Luxembourg

Agence pour le développement de l'emploi (ADEM)   **"Digital Skills Bridge"**

What is this about?

The Digital Skills Bridge project addresses two disparate but connected developments in the current labour market: on the one hand a decline of demand for certain jobs and skills due to automation and digitalisation; on the other hand an increased demand for new jobs and skills that is currently not being met. These developments lead to a skills gap.

In order to narrow this gap, employers are offered support for

1. identifying their future skills need regarding their workforce;
2. assessing current competencies of the employees that are affected by the aforementioned changes;
3. identifying the best option for each affected employee, either on the internal or the external labour market;
4. training the new competencies according to the requirements of the identified future job.

In addition to the counselling, planning and coaching, employers also receive financial support for the cost of training, the amount of which depends on the targeted labour market (internal/external) as well as on the salary cost during training.

When?

The pilot project started in May 2018 and will run until October 2019. The results of the pilot will then be reviewed, and decisions will be taken how to integrate the project findings into ADEM's service portfolio. In the second semester of 2020, ADEM will start to offer advice to companies on how to plan their human resources in response to digital and technological transformation.

Which target groups?

The primary target group are employers that are facing challenges regarding the composition of their workforce. But employees are also targeted by this practice since they are profiled and trained to prepare them for a new job.
In the course of the first pilot launched in May 2018, 11 companies and 330 employees from these companies participated in the programme.
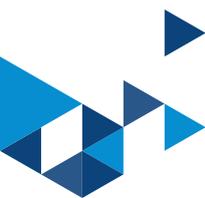
Annex – Promising practices for the prevention of unemployment

Annex 2 - Estonia

Eesti Töötukassa   **"Work and Study" programme**

What is this about?

The Work and Study Programme is targeted to employees at risk of unemployment due to lack of vocational or professional qualification, Estonian language skills or outdated skills.
Financial support is provided for both employees and employers. Before enrolling in the training programme, the employees are required to participate in career counselling and agree on a training plan.

Employees can:

- Participate in short-term labour market training programs lasting up to one year. Training vouchers up to 2500 € are provided;
- Participate in degree studies leading to vocational education or bachelor's de-gree. Study allowance up to 130 € per month is offered;
- Receive support to cover the costs related to qualification examinations (up to 500 €).

Employers can apply for:

- Training grants for recruiting new employees (up to 2000 €);
- Training grants for upskilling employees in case of restructuring, changes in technology or qualification requirements (up to 2000 €);
- Training grants to improve the Estonian language skills of their employees (up to 2000 €).

The choice of training programs is limited. Both basic skills training courses (Estonian language and digital skills) as well as specific vocational skills training programs are offered. Vocational training programs in choice are selected based on the data from the anticipation and monitoring system for labour and skills demand in different economic sectors (OSKA), developed in 2015 and covering 24 labour market sectors. Only training programs related to occupations, where the labour demand is growing and exceeds the supply are offered.

When?

The programme is the result of a specific mandate to design measures to prevent unemployment, given to Töötukassa by its Supervisory Board. The programme started running on the 1st of May in 2017 and was further expanded in 2018, raising the income threshold to be eligible for training.

Which target groups?

The main groups targeted by the programme are: employees at risk of unemployment due to outdated professional skills, language or ICT skills, or employees who are unable to continue at their current job due to a health condition; employers recruiting new employees in professions where there are labour shortages and which are considered to be of growing importance in the near future; and employers who need to adapt the skills of their employees due to restructuring of the company, lack of proficiency of Estonian language skills, changes in technology or qualification requirements.

Annex – Promising practices for the prevention of unemployment

Annex 3 - Belgium (Flanders)

Vlaamse Dienst voor Arbeidsbemiddeling en
Beroepsopleiding (VDAB)

**Data-driven assessment
of jobseekers**

What is this about?

The data-driven assessment of jobseekers is a system developed by VDAB to better analyse the situation of customers/jobseekers and subsequently to plan their support.

When a jobseeker contacts VDAB, they are suggested to subscribe online. During the first period, they can rely on the digital applications of VDAB in order to find a job. After a maximum of 6 weeks, the counsellor will call the jobseeker and determine if the jobseeker is self-sufficient or in need of personal counselling. In case the jobseeker is in need of personal counselling, he or she will be directed to one of the sectors for personal counselling. In case the jobseeker is considered self-sufficient, he or she will get some tasks and tips and can further rely on the online applications of VDAB. This process is repeated a few times and after 11 months all jobseekers are directed to personal counselling.

VDAB utilises analysis of several factors including unemployment history, language skills, education, age, wished jobs, wished regions, and work history to differentiate between self-service clients and those needing more assistance.

All client data are analysed through a predictive model that enables to measure the distance to the labour market, expressed as the probability of finding a job within six months. Based on this distance from the labour market, jobseekers are divided into three categories with three corresponding colours:

- Red: less than 35% probability of finding a job;
- Yellow: between 35% and 65% probability of finding a job;
- Green: over 65% probability of finding a job.

Clients' job searches can also be tracked in real time by monitoring their activities on the applications of VDAB, i.e. online behaviour when it comes to updating their dossier, job searching, applying for a job, etc. This can help to capture people who are digitally incapable. This continuous monitoring can also help to quickly identify people previously deemed self-sufficient but now needing more assistance and help to prioritise resources and personalise interventions.

Moreover, the model is constantly compared to reality to check if predictions are accurate, and results are used in turn to fine-tune the model.

When?

The system was developed by VDAB over the last 2 years to help prioritise interventions and counselling. The system recalculates the probabilities every day. The model itself is retrained every month. Many jobseekers will eventually need some support in their search for a job, but clients will have any different levels of support needs. In this case, the model helps to assess individual needs and prioritise intervention.

Which target groups?

The model applies to all jobseekers registered within VDAB, but it is particularly designed to help provide a good quality of personalised support to jobseekers who are not self-sufficient in looking for a job and that could need different levels of support, combining different tools.

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