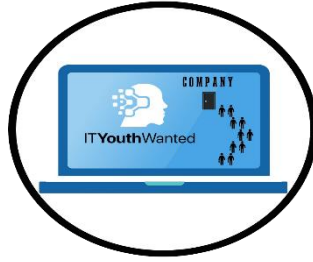




Co-funded by the
Erasmus+ Programme
of the European Union



Erasmus Plus, Strategic Partnership in Youth, Supported by Turkish National Agency

**Project Title: ENHANCING THE DEMAND-DRIVEN YOUTH EMPLOYMENT IN IT
SECTORS**

Project Start Date 01-12- 2020

Project End Date 30-11- 2022 (24 Months)

Project Number: **2020-2-TR01-KA205-095580**

INTELLECTUAL OUTPUT 1

Development of Cooperation Methodologies Between Youth and IT Businesses

The Project Partners

The Project Coordinator: Karamanoglu Mehmetbey Universitesi www.kmu.edu.tr

Partners

1. Polygonal, Italy www.polygonal.ngo
2. Learning and Innovation Academy of Finland Oy, Finland www.liaf.fi
3. Institute of Entrepreneurship Development, Greece www.ied.eu
4. VisMedNet Association, Malta www.vismednet.org
5. Karaman Teknoloji Geliřtirme Bölgesi Yönetici A.Ş. Turkey

ABSTRACT

This intellectual output presents the collaborative work of the project partners under the project name (as stated above) and the project number **2020-2-TR01-KA205-095580**, supported by Turkish EU Agency. This output outlines the contents of Development of Cooperation Methodologies Between Youth and IT Businesses.

Legal warning

The European Commission support for the production of this publication does not constitute endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Contact Information: Karamanoglu Mehmetbey University, Yunus Emre Campus, 70100

Karaman www.kmu.edu.tr Phone:+903382262081

Email: iletisim@kmu.edu.tr and mustafabahar968@gmail.com

Qualification recognition

What is it? (Definition or a very short description)

Qualification recognition is a concept which stands for allowing professionals qualified in one country to practice in another, with limited administrative requirements and without having to requalify.

What are the qualification recognition problems faced by young job seekers (employees) and IT businesses (employers) in IT fields?

- Lack of ontological knowledge of IT businesses and job seekers about what counts as recognition of qualifications,
- Lack of knowledge about how qualifications are assessed, their validity and integrity based on the fact that some IT degrees, certificates or courses (in different countries/institutes) may not contain up-to-date, latest and essential needs that one country/organisation requires.
- Lack of infrastructure of institutions that provide IT degrees/certificates, which results in acquiring theoretical knowledge rather than hands-on practical skills for IT subjects, some of which require practical/hands-on infrastructures (cybersecurity, blockchain, data entry etc.)
- Lack of policy developments in EU countries with regard to national qualification recognition processes about new IT fields (ex. Blockchain, cloud computing etc.) since some IT fields emerge and evolves very fast than the speed of preparing necessary policy developments.

What are the Best Methods for Job Seekers and IT businesses (employers) to solve qualification recognition problems?

-Job Seekers

*Ask for Information about qualification aspects of IT degrees/certificates that you receive such as

- what the final qualification you receive will be;
- how many ECTS credits you will have;

- the nature of the qualification (academic/professional);
- the status of the qualification and of the HEI (accredited/not accredited);
- the academic rights (which further academic programmes you can enrol in with your qualification).

*Look for quality for IT degrees/certificates for ones that are accredited/ quality-assured by the competent authority. There are a number of institutions that do not undergo the process of quality assurance: their qualifications might be relevant in the labour market but not recognised for academic purposes. If the institution is not official, and even if it is of high quality, it is possible that your qualification will not be recognised. Accredited institutions means an institution that has been authorised by the competent authority.

*Be aware of substantial differences where in the EU, The European certification systems of IT businesses and relevant higher education systems are different. These differences while do not necessarily prevent recognition, differences can lead to a partial recognition, or even to a denial, when they are so relevant that they are defined as “substantial” (length of degree courses, accreditation, subjects covered etc.). What is considered a substantial difference in one country, might not be “substantial” in another, hence job seekers must be careful in choosing degrees that are internationally recognised.

*Do not believe in fairy tales or shortcuts that some IT companies tell you that you can get a qualification with zero effort but simply by paying some cash, and look out for so-called “diploma/certificate mills”, non-accredited institutions claiming to be accredited, which sell meaningless academic qualifications. Make sure that any institution is accredited before giving them your money, and if you have any doubts, contact with official bodies.

*Job seekers should ensure that they can effectively communicate their employability skills (qualifications) to the employers. To do so, they should

- reviewing their profiles and more personalize them with their skills (soft skills included),
- Writing or reviewing the presentation of themselves, including their short bios and pictures and other relevant information considered of interest to an employer;
- Reviewing their awarded digital badges and evidence to start developing a script of a short video presentation;

- Adding new evidence on achievements that contribute to build a more comprehensive portrait of their capacities;
- Recording a 3 to 5-min video testimony to communicate their profile to a prospective employer by highlighting their experiences and achievements; Customize the ePortfolio paying attention to the formal organization of all elements and to aesthetic aspects before sharing with an employer for appraisal.

IT Businesses (Employers)

*Employers are required to appraise the employability skills on the basis of the job seekers' presentation and the evidence provided through the competency-based ePortfolio.

*Recognition of soft skills where the employers should pay specific attention to go deeper in the employees' soft skills by clearly communicating/outlining such skills and consider such soft skills applicability for the positions.

*In cases where the showcased work is of exceptional quality, employers may endorse the student with a written personal commendation.

Wage differentials and Gender Biases

What is it?

The gender wage gap is a measure of what women are paid relative to men. It is commonly calculated by dividing women's wages by men's wages, and this ratio is often expressed as a percent, or in dollar terms. This tells us how much a woman is paid for each dollar paid to a man. This gender pay ratio is often measured for year-round, full-time workers and compares the annual wages (of hourly wage and salaried workers) of the median ("typical") man with that of the median ("typical") woman.

What are the wage differentials and gender biases problems faced by young job seekers (employees) and IT businesses (employers) in IT fields?

Firstly, the relatively low employment rates of women in IT firms and the concentration of women in low-wage firms (sorting) and occupations (segregation) underscore the importance of ensuring that recruitment and promotion practices in the sector are unbiased. These trends are interlinked, since higher representation of women in low-wage firms and occupations is likely to be contributing to the low employment levels of women in the IT sectors more generally. In particular, the findings suggest a lack of career mobility and advancement for women in IT jobs compared to those in other sectors, which will affect both the attraction and retention of a diverse workforce. If women are not advancing in the IT sectors, there will be fewer female role models and mentors to attract more women. Furthermore, if women working in the IT sectors are unable to advance in their careers, they will be motivated to change sectors.

The low employment rate of women in the IT sectors is also certainly in part due to a pipeline problem, since there is still a disproportionately low number of women with STEM and IT related university degrees, reducing the pool of potential female applicants for some IT firms and occupations. Specialisation differences between men and women can be explained most notably by gender norms and expectations, which are further enforced by the lack of female role models. Thus, measures taken to ensure transparency and fairness in recruitment and performance assessment will contribute to both attracting and retaining more women in the IT sectors. Corporate training on unconscious gender bias, particularly amongst managers, can also play an important role in establishing equitable recruitment practices and performance assessments.

Secondly, elements related to the quality of the work environment can also have significant negative impacts on the career trajectories of female employees in the IT sectors. Measures taken—above and beyond wage incentives—to help women meet and balance their career and personal objectives are essential. Such measures include focussing on improving work-life balance through the provision of adequate parental leave, affordable and quality child care, flexible working arrangements, but also creating a more supportive environment through the use of mentoring programmes, career guidance and training. Awareness building on unconscious gender bias and appropriate workplace behaviour can also be key to ensuring a safe and attractive workplace for women and men. In addition, effective sexual harassment policies are essential. While many such measures may be nominally gender-neutral they can have disproportionately more important benefits for female employees.

And finally, the relatively high pay gap in the IT sectors between men and women with similar skills due to discrimination and bargaining underscores the importance of ensuring that workers (and others) are guarded against discriminatory practices. As a high-rent sector, there are greater returns on bargaining efforts and scope for discrimination. While we are not in a position to assess the importance of the factors that drive gender differences in bargaining and discrimination, gender bias in corporate practices related to wage setting may play a role. A number of countries have introduced pay transparency tools to help close the gender wage gap. In some cases, these focus on information provision, but in other cases sanctions can be imposed for IT firms in which the gap is particularly significant. In addition, collective bargaining can play an important role in reducing the scope for discriminatory policies, including those related to gender.

There is also evidence that women are less likely to demand wages that reflect their true contributions to firm rents. Looking at the employer side, a recent study (Angler, T. 2022) shows that while women and men are equally likely to request a raise, men are more likely to succeed with their request even when controlling for background factors like education, tenure and contract type. These explanations apply to the entire workforce, thus it is worth investigating why such issues might be more prominent in the IT sectors compared to the non-IT sectors.

What are the Best Methods for Job Seekers and IT businesses (employers) to solve wage differentials and gender biases problems?

*Make a longer shortlist when recruiting

Gender inequities can be inherent in informal recruitment processes, particularly in male-dominated industries. To address this, recruiters should make their informal shortlist longer.

*Employers can promote gender equality in the workplace by being transparent about wages, to ensure women aren't receiving less than men in equivalent roles. Pay brackets can encourage female applicants and employees to negotiate their wage by giving an indication of reasonable expectations for a particular role.

*Asking candidates to perform tasks they would be expected to carry out in the role they are applying for, enables organizations to assess their suitability based on their performance, says a report from the Government Equalities Office. These tasks need to be standardized across all applicants to ensure fairness.

Recruiters are also urged to use structured interviews, where all candidates are asked the same questions in a predetermined order and format. Grading the responses using standardized criteria reduces the risk of unconscious bias, the report says.

*Be transparent

Report on your gender statistics transparently. Accompany it with a clear action plan on the steps you are taking as an employer to close the gender pay gap, with clear targets and milestones.

Communicate this openly and honestly with your workforce, explaining the tangible progress you plan to make.

*Implement gender neutral recruitment processes and carefully word your job adverts.

Research shows that adjectives such as ‘competitive’ and ‘determined’ put off women. On the other hand, words such as ‘collaborative’ and ‘cooperative’ tend to attract more women than men.

Standardise interviews, anonymise resumes and use blind evaluation processes.

Studies by Unilever and Vodafone (2021) have found that blind evaluation procedures — including work sample tests and neuroscientific tests of an applicant’s aptitude and skills — have helped them recruit from more diverse backgrounds.

* Provide training on unconscious bias

Educate employees about their own unconscious bias. Although this does not guarantee that attitudes will change, it does help employees to understand their biases and to work towards eliminating them.

* Have a clear policy on discrimination

A Unilever study (2021) found that women and men struggle to acknowledge gender discrimination and inappropriate behavior (most likely sexual harassment) in the workplace. 67% of women said they feel pressured to get over inappropriate action. And most women

(64%) and slightly more than half of men (55%) said that men don't confront each other when witnessing this behaviour.

Create a clear, unbiased, non-retaliatory discrimination policy that ensures employees have a proper way to comment or report on inappropriate treatment in the workplace.

Make sure everyone knows and understands the policy. Implement severe penalties for sexual discrimination and harassment.

*Ensure you're actively encouraging women to progress

Make sure that female employees are applying for promotions and asking for pay rises.

Self-assessment

What is it?

Self-assessment provides job seekers (employees) with an opportunity to self-evaluate, or make judgments about their learning process and products of learning, based on criteria that employees seek for. Also, self-assessment is the process of looking at oneself in order to assess aspects that are important to job seekers' identities. It is one of the motives that drive self-evaluation, along with self-verification and self-enhancement. An informal, but universally recognised relevant tool of measuring acquired competences is a self-assessment performed by each person. Self-assessment reflects one's individual attitude towards their career potential and being competitive on the labour market (Lohan & King, 2016).

What are the self-assessment problems faced by young job seekers (employees) and IT businesses (employers) in IT fields?

The higher the self-assessment of one's skill resources, the higher the assessment of one's self-worth. Consequently, more self-confident people are willing to put in more effort towards achieving their goals, e.g. finding a job (Savickas, N. 2018) Research suggest that individuals with high self-esteem maintain optimism in the face of failure, which makes future success and future satisfaction more likely (Varga et al., 2017).

As shown by research conducted over at least twenty years, independent factors (gender, age and learning environments) can impact self-assessment of job seekers in IT fields. (Zeigler-

Hill & Myers, 2022). They can differentiate how people view their own labour potential (Monteiro et al., 2016).

The modern labour market has a growing awareness regarding the importance of an individual's competences in the process of finding jobs. Employee competences are considered the most important determinant of competitiveness among job seekers and crucial career capital in many sectors of the economy (e.g.: Adeyinka-Ojo, 2019).

Understandably, the newly graduated young IT job seekers enter the job market with less professional experience and fewer contacts than people already employed who are looking to change jobs. The main asset of graduates are primarily their skills acquired during their degree courses. Due to the fact that competences can determine success in university-to-work transition, they are called transition capital (Turska, U. 2017). For this reason competences should be a fundamental contribution that education authorities make in educating graduates who are competitive on the labour market and stand a high chance of securing a job (Farmaki, Y, 2019).

What are the Best Methods for Job Seekers and IT businesses (employers) to solve self-assessment problems?

* Entrepreneurial competences is a big factor to solve self-assessment problems where as the research shown that there is a significant relationship between: innovation, propensity to take risks, entrepreneurial family background and entrepreneurial intention (Gurel et al., 2021). It was demonstrated that entrepreneurial skills are currently especially important for young people who are entering the labour market in IT sectors because they allow them to face the challenges of this highly competitive and demanding industry (Daniel et al., 2018).

*There is a relationship between the assessment of one's competences and self-evaluation of one's situation on the labour market.

*Independent variables: degree cycle, gender, age and place of study significantly affect the self-assessment of the level of acquired competences and of one's chances on the labour market.

* Self-confidence about one's chances on the labour market is not linked to a single factor or high assessment of a single skill. The key to analyse self-esteem is to take into account the cumulative and simultaneous role of many factors which determine how one views their competitive advantage (e.g.: Karli, P. 2019; Vargas et al., 2019). Although analysing single variables can lead to academically interesting conclusions, it does not allow for a holistic examination of the process and identifying key competences that play a major role in the perception of one's own chances on the labour market.

Affirmative action

What is it?

Affirmative action is an employer's standard for proactively recruiting, hiring and promoting someone (ex. Young people, women, minorities, disabled individuals and veterans).

Affirmative action is deemed a moral and social obligation to amend historical wrongs and eliminate the present effects of past discrimination. Also, affirmative action is defined as a set of procedures designed to; eliminate unlawful discrimination among applicants, remedy the results of such prior discrimination, and prevent such discrimination in the future. Applicants may be seeking admission to an educational program or looking for professional employment.

What are the affirmative action problems faced by young job seekers (employees) and IT businesses (employers) in IT fields?

In the lack of affirmative action, there might happen a reverse discrimination, which is the notion that instead of promoting anti-discrimination, affirmative action leads to discrimination against individuals and groups that come from non-disadvantaged backgrounds. This further creates a stigma that only people from non-disadvantaged backgrounds would be first employed.

In the lack of affirmative action, companies may discriminate against individuals because of their race, color, religion, sex, or national origin in decisions regarding hiring, firing, compensation or other forms of employment.

What are the Best Methods for Job Seekers and IT businesses (employers) to solve affirmative action problems?

***Develop and post an EEO policy**

The employer doesn't discriminate against the stated groups, which include race and color.

This plan must declare how it intends to improve the representation of females and minorities while simultaneously respecting the rights of the majority. The plan must also have a clause that states that when the balance has been achieved, affirmative action will stop.

***Assign responsibility for policy implementation and review**

There needs to be at least one person within the company who periodically implements and audits this policy. They are the ones who identify the underutilized areas and take the necessary steps to correct the imbalance through hiring, training and promotion.

***Develop a relational org chart**

This type of display shows the total numbers of employees in each department by race and gender as it relates to the other departments to give proper context.

***Examine workforce, job group and availability**

The officer needs to analyze each of these sectors. Workforce analysis takes a look at all titles and units, showing the total number of employees as well as the total of females and minorities specifically. Then, each employee is grouped by job categories, including managers and laborers. Employers look at metrics, such as the number of incumbents and the incumbency utilization ratio of females and minorities, for each job group. Finally, they need to look at several factors, such as the labor market and availability of the underutilized groups in the surrounding area, as well as the skills, profitability and transferability of the group.

***Identify problems and design an action plan**

Employers look at different job levels, such as skilled and unskilled entry-level positions and jobs filled internally. When they spot any underutilization, they look at its identification process and how they calculate the goal placement rate for each job group for their reports.

***Set times for goals (not quotas)**

After each analysis, employers must set measurable and timely goals to fix these cases of

underutilization of minority and female workers. The goals are set separately for each group and must be equal to the percentages calculated by the utilization analysis.

***Take action steps**

Employers outline the exact steps they plan to take to address underutilization. These steps can entail employer-provided training programs or outreach programs for the community.

***Develop an AAP internal audit program**

The objective is to demonstrate that all efforts to address and rectify underutilization are taken in good faith. An internal audit means taking a deeper look at your company's employment policies and other personnel activity. On top of that, you need to take a look at the documentation and review the contents of your AAP while monitoring the progress toward your goal.

Diversity plan

What is it?

Diversity plan is an actionable plan that describes how your business will go about including people from diverse backgrounds. It is a commitment by the company to create a workplace that is fair and inclusive, and promotes a workforce which better reflects the diversity of communities.

Diversity gives businesses access to a greater range of talent, not just the talent that belongs to a particular world-view or ethnicity or some other restricting definition. It helps provide insight into the needs and motivations of all of your client or customer base, rather than just a small part of it.

What are the diversity plan problems faced by young job seekers (employees) and IT businesses (employers) in IT fields?

* In the lack of diversity plan, there emerge a problem of connection to a wider range of customers, which will negatively affect companies' in increasing their ability to connect with and understand a wider audience.

* In the lack of diversity plan, there emerge a problem of reduced turnover, because employees want to stay at a company where they feel valued and supported, and a strong diversity-and-inclusion strategy can ensure that happens.

* In the lack of diversity plan, there emerge a problem of increased productivity, because diversifying employees can help boost productivity by encouraging your employees to innovate and think outside the box. Additionally, employees are more engaged with their work and more committed to the company's overall mission.

* In the lack of diversity plan, there emerge a problem of larger talent pool, because when companies commit to diversifying their workforce, they open themselves up to a wider talent pool with candidates they may not have considered, and these workers can bring fresh perspectives and new skills to their businesses.

What are the Best Methods for Job Seekers and IT businesses (employers) to solve diversity plan problems?

A well-developed diversity and inclusion strategy will increase employee engagement and success where employees are better included and are supported.

*Take a look at the current demographics of your company

First, you want to capture data on employee demographics. It is important to understand what your workforce looks like when compared to the labour market. Paying attention to your company's employee demographic will also help you identify any areas of concern.

*Create a diversity and inclusion mentoring program Diversity and inclusion mentorship programs give diverse and minority employees a chance to rise above the ranks. Whether through group or 1-on-1 mentoring, mentors train mentees to help them learn the ropes and gain essential skills. They work closely to ensure mentees grow closer to their career goals, whether that be a promotion or learning a new skill.

* Create employee resource groups

Another initiative rooted in advocacy and employee support is employee resource groups (ERGs). These groups focus directly on assisting employees in continued career growth.

You may run ERGs for specific categories, such as working moms or LGBTQ+. Those participating in these groups will gain access to a community of like-minded individuals and join in the collective effort to succeed in this workspace. This will reduce feeling of loneliness, alienation, and discomfort.

* Create diversity and inclusion training

Diversity and inclusion training while crucial, can lead to division within an organization. However, there are a few ways to pursue it without causing much friction. You may consider reverse mentoring, group mentoring, sponsorship, and ERGs so that employees can better connect with and support each other.

* Set up fireside conversations about diversity, equity, inclusion, and belonging topics

Finally, and this may need to come from leadership, create a safe space where talking about DEI topics is acceptable. Depending on the size of your organization, you may run fireside chats or company lunches to check in with one another.

Outlining the best cooperation methods/ideas between IT skilled youth and IT businesses to foster youth employment in IT sectors.

- accommodation and assistance with partner/spouse position
- health coverage and insurance
- mentoring and coaching.

Introduction	3
A quick introduction to IT employers:	
Case Study A: Heritage Malta	4
Case Study B: Betsson Group	4
Case Study C: B2B MALTA LTD. REGTECH PARTNERS LTD	4
Accommodation and assistance with partner/spouse position	5
Definition	5
Outline of best methods and practices	10
Case Studies	11
Health coverage and insurance	12
Definition:	12
Outline of best methods and practices	12
Case Studies	13
Mentoring and coaching	14
Definition:	14
Outline of best methods and practices	14
Case Studies	14
Concluding remarks	14
Case study A	15
Case study B	15

Introduction

In the following research, we tried to outline the best possible corporations to foster employment between IT skilled youth and IT businesses.

This research took the methodology of qualitative desk research and interviews. For the interviews, we approached several employees that work within the IT sector. It is good to mention that all employees choose to give their input to this research on the condition that they remain anonymous. We also had interviews with three completely different IT employees (listed below) coming from different IT sectors apart from giving us their points of view regarding the matter of employment we also asked them to give us their current positions on

- accommodation and assistance with partner/spouse position
- health coverage and insurance
- mentoring and coaching.

We have also asked them to fill up the following table so that from the information given we can put data concerning the IT sector they are operating in.

	Minimum Qualifications Required	Level and kind of experience needed for such a position	Tasks/Role in the Organisation	Typical remuneration package afforded for such a position	Typically Indefinite/definite contract

Position 1 in IT	University Degree (ideally +), or equivalent	Hands on Work Experience in the area of expertise with a reputable organisation	Tasks are self- explanatory. We do not offer SAAS. All our projects are internal and self- funded.	€40-€55/ hour	Project Based – Then another possible extension for maintenance and R&D
Position 2 in IT	University Degree (ideally +), or equivalent	Hands on Work Experience in the area of expertise with a reputable organisation	Tasks are self- explanatory. We do not offer SAAS. All our projects are internal and self- funded.	€60/hour	Project Based – Then another possible extension for maintenance and R&D
Position 3 in IT	University Degree (ideally +), or equivalent	Hands on Work Experience in the area of expertise with a reputable organisation	Tasks are self- explanatory. We do not offer SAAS. All our projects are internal and self- funded.	€35 – €60/ hour	Project Based – Then another possible extension for maintenance and R&D
Position 4 in IT	University Degree (ideally +), or equivalent	Hands on Work Experience in the area of expertise with a reputable organisation	Tasks are self- explanatory. We do not offer SAAS. All our projects are internal and self- funded.	€50/ hour	Project Based – Then another possible extension for maintenance and R&D

		Minimum Qualification	Level and kind of	Tasks/Role in the Organisation	Typical remuneration
--	--	----------------------------------	------------------------------	---------------------------------------	---------------------------------

		s Required	experience needed for such a position		package afforded for such a position
Position 1 in IT	Manager	Pertinent First Degree (MQF level 6)	8 years relevant work experience of which 2 years in the respective area of expertise	The Manager is responsible for the design, development, and implementation of the ICT strategy and manages the ISS, Innovation, and ICT services and support functions including infrastructure and technical operations in order to provide outstanding service to staff, customers, museums, and stakeholders. The Manager will deliver innovative, effective, efficient ICT systems and applications that enhance and ensure effective management and administration, and also makes sure that such systems are adequately supported. The role focuses on business systems and services and will include hands-on duties such as hardware and software support as well as project management and developing ICT strategy and budgets.	31212
Position 2 in IT	Senior Principal Officer	Pertinent First Degree (MQF level 6)	6 years of relevant work experience	In collaboration with the Manager the role of the Senior Principal Officer is to coordinate and implement all activities involving	26953

			of which 1 year in the respective area of expertise	IT hardware and/or software including related policies and procedures at Heritage Malta and to coordinate the activities of the ICT team. S/he shall also be responsible to ensure that all department objectives are achieved on time and according to the specified budget.	
Position 3 in IT	Principal Officer	Pertinent First Degree (MQF level 6)	3 years of relevant work experience	In collaboration with the Manager and the Senior Principal Officer the role of the Executive ICT is to execute, coordinate and implement all activities involving IT hardware and software policies and procedures at Heritage Malta.	24757
Position 4 in IT	Coordinator II	Pertinent Diploma (MQF Level 5)	5 years of relevant work experience	Provide IT support in the development of hardware and software solutions including providing assistance with defining instructional technology needs.	24008
Position 5 in IT	Coordinator	Pertinent Diploma (MQF Level 5)	4 years of relevant work experience	Coordinates planning, implementation, and maintenance of all IT systems.	22327
Position 6 in IT	Skilled Technician	Pertinent Certification (MQF Level 4)	3 years of relevant work experience	To maintain the agency's IT systems and ensure that they work efficiently and effectively and provide the necessary solutions to	20289

				system issues	
Position 7 in IT	Technician	Technical Certification (MQF Level 3) in a related subject	2 years of experience in the respective area of research	To diagnose, repair and maintain hardware and software to ensure the smooth running of Agency's operation.	18905
Position 8 in IT	Junior Technician	Technical Certification in a related subject	3 years of relevant work experience	To assist the Technician in diagnosing, repairing, and maintaining the smooth running of all IT systems within the Agency	16919

A quick introduction to IT employers:

Case Study A: [Heritage Malta](#)

Heritage Malta is the leading national entity that curates heritage sites all over the Maltese islands. As the needs arise with the multiple heritage sites they upkeep, the use of advanced technology is imperative in their work. Thus over the years they have been increasing their IT working force and have been investing in IT infrastructure in all of their heritage sites. We have been in touch with xxxxx Grima, who was quite straightforward and positive on the upcoming future IT projects that Maltese heritage can benefit from.

Case Study B: [Betsson Group](#)

Betsson is a Swedish multinational company that offers online gambling products. Since the emergence of the commercialised internet, they have been at the forefront of online betting. Thus they have to keep abreast with the latest technologies and they are eagerly on the lookout for the best IT skilled workers that can fit their ever-growing ambitious targets. We have talked to Sonya xxxx she was more than enthusiastic about opening up on the giant's IT operational methods

Case Study C. [B2B MALTA LTD.](#) [REGTECH PARTNERS LTD](#)

Here we have talked with Mr. Gordon Theobald. He is the director of these two startups. Regtech is a leading innovative startup that works in regulations, operations, and compliance. In B2B Malta is about the facilitation of evaluating business opportunities and market gaps. In both runnings of the companies, they are after automation and innovations. They may be small but their projects are big and valuable.

The use of IT workers mainly goes to developing and consulting on the two platforms needed to run the startups mentioned above and to support the creation of new software, systems, and APPs. Some of their work involved algorithms that are quite challenging to produce.

He finds that there is still a limited pool of people with expertise to work with them, however, this pool of professionals would never come to work with them since they already work with gaming companies that pay them very well and also give them a lot of benefits. Also sometimes these people would be allowed to work on massive projects that only a limited handful of big companies can offer.

They find it quite difficult to find people to work with them. In many of their projects, they would have to outsource and have part-time employees create the project,

So many times we take someone junior to work with us and we invest some money, their work is timely,

So usually we are perfect to have a couple of people working with us that are good at handling juniors. Teaching them and guiding them.

Also, we do innovative things and projects that not everyone can do.

Also, the IT sector varies, here with us we would have space for IT graduates to learn mostly in graphic design and web developers because we can give them some time and some projects that they can handle easily.

Accommodation and assistance with partner/spouse position

1. Definition:

With an ever-increasing hectic fast life, increase in career-oriented employees, increase in the female working forces, opportunities for remote working, and more practical and efficient travel; more and more corporations and employers are seeing the benefit of supporting spouses/ partners.

When it comes to accommodating an employee at the place of work, is nothing new nor does it come as a notion related to IT work directly. Many different work sectors have been accommodating their workers in a different array of ways. Accommodating, assisting, and supporting employees' spouses and partners seems to be a win-win situation for both employees and employers. This is reflected in a survey conducted by NetExpat and EY:

- NetExpat revealed that 33% of employers reported an increase in the performance of their employees when support was provided to their partners on international assignments¹.
- 71% of employers offering partner support expect an increase in assignment satisfaction
- 71% of corporations see an unhappy and unintegrated partner in the host location as the most common reason for a failed assignment.
- 62% of employers wish to encourage employee acceptance of an assignment by offering support to their partners.

¹ <https://www.netexpat.com/rps-facts-global-mobility-going-forward>

- 70% of the male and 78% of the female employees see partners, who are unwilling to move because of their career as the most common reason for not accepting an assignment.
- 43% of employers expect an increase in job performance².

When it comes to accommodation and assistance with partner/ spouse positions, it seems that the academia sector has been involved in this for quite a long time and hence most of the available research refers to this employment sector. In this paper, there will be instances where we will be referring to this sector's research and modus operandi as best-case scenarios or practices with the vision that such research can be adapted to foster youth employment in IT sectors.

It is good to note that when it comes to accommodating employees and their spouses/partners, it seems that so far most workplaces where such practice is embraced, it has been directed more towards senior positions. However in the case of employment-related to IT sectors also middle management and junior positions are considered for accommodation.

Some classic accommodation examples can vary from having reserved parking lots, flexible working hours and schedules. In many sectors, such accommodations are specific to evolve a particular sector of society in employment.

One example is when different accommodation arrangements are granted to people with disabilities. According to the U.S Department of Labour, a job accommodation is an adjustment to a job or work environment that makes it possible for an individual with a disability to perform their job duties. Accommodations may include specialised equipment, modifications to the work environment, or adjustments to work schedules or responsibilities³. In some countries these accommodations are requested by law depending on how many workers the working force of a particular working environment has. For example

² <https://www.netexpat.com/partner-support-why-should-i-invest>

³

<https://www.dol.gov/general/topic/disability/jobaccommodations#:~:text=A%20job%20accommodation%20is%20an,to%20work%20schedules%20or%20responsibilities>.

in Malta, if you are hiring more than 20 employees at least 2% must be persons with disability⁴.

Such accommodations can also be extended to partners/spouses.

For this document, the following definitions can be used.

Spouse means a husband or wife. For purposes of this definition, husband or wife refers to the other person with whom an individual entered into marriage as defined or recognized under state law for purposes of marriage in the state in which the marriage was entered into or, in the case of a marriage entered into outside of any state if the marriage is valid in the place where entered into and could have been entered into in at least one state. This definition includes an individual in a same-sex or common law marriage that either: (1) was entered into in a state that recognizes such marriages; or (2) if entered into outside of any state, is valid in the place where entered into and could have been entered into in at least one state⁵.

Here when talking about the partnership we are referring to domestic partners. A domestic partner relationship may be demonstrated by any three of the following types of documentation: a) joint mortgage or lease; b) designation of the domestic partner as the beneficiary for life insurance; c) designation of the domestic partner as primary beneficiary in the employee's will; d) domestic partnership legal agreement; e) powers of attorney for property and/or health care; f) joint ownership of a motor vehicle, checking account, or credit account; and/or registration of the domestic partnership⁶.

In the IT sector, especially if cross-border operations are needed as well foreign employees to the country of origin, relocation for employees and partners might be needed. In such cases, the following are some of the difficulties that feature when there is the relocation of employees⁷:

- Intercultural Support

⁴ <https://jobsplus.gov.mt/employers-mt-MT-en-GB/employing-persons/employing-persons-disability>

⁵ <https://www.lawinsider.com/dictionary/spouse>

⁶ <https://policies.wsu.edu/prf/index/manuals/60-00-personnel/60-15-partner-spouse-accommodation/>

⁷ <https://www.sirva.com/learning-center/blog/2020/02/19/supporting-accompanying-spouses-partners-during-relocation>

- Settling in services: such as tax explanation
- Job search transition assistant
- Education and accreditation courses
- Work permits
- Knowing the host location rules when it comes to accepting the spouse/partner relationship
- Language/s associated with the hosting country
- Support with a sense of belonging. Assisting in assimilating into new surroundings and culture.

Different types of Partner Accommodation

To understand better how a spouse/partner can be supported with accommodation it is good to identify that there can be different types of accommodation. As mentioned in the recommendations by SIRVA (Worldwide Relocation & Moving) the employer considering support should consider:

- **Do Your Homework:** Be sure to determine the employment eligibility of the spouse/partner from both a company policy and country-specific standpoint, and be aware of the host country's current work permit regulations. If the spouse/partner isn't authorised to work in the host country, clearly define any support that will be made available in its place. For example, tuition reimbursement may appeal to individuals hoping to advance their degrees or who would welcome the opportunity to prepare for a career change. If the relocation will be long-term or permanent, funding the updating of their qualifications in the host country would also be a welcome provision. Arranging volunteer opportunities may also offer unique benefits to accompanying spouses/partners, including the addition of overseas experience to their resumes.
- **Maintain Open Communication:** After identifying any potential challenges, including any work limitations or cultural mores specific to the host location, maintain direct communication with the employee and spouse/partner. In addition to helping set and manage expectations, this will also provide an opportunity to develop a plan for the spouse/partner's assimilation.
- **Support Job Searching and Maintenance:** Consider providing resume revision guidance based on the host country's trends and preferences, a labour market review,

job leads, and search services to help the accompanying spouse/partner find employment. Language and cultural training should be added to support assimilation into the new environment and to develop an awareness of workplace norms that may vary greatly from the individual's country of origin. Interview training that takes cultural differences into account can also be extremely helpful. Once the individual has found employment, consider reimbursement of commutation fees (for public transportation) or a car rental, if appropriate. As an alternative, if the spouse/partner possesses skills that allow for remote work, guidance and assistance with freelance/contract work and startup costs may be an option – but be sure to consult a subject matter expert and advise the individual on tax implications that may or may not be a consideration in the destination location. Remember, too, that expatriate spouses/partners could be a source of talent. Offering them direct employment or contract positions may provide mutual benefits to the individuals, employees, and the organisation.

- **Get Them Connected:** To ensure that an accompanying spouse/partner has a better chance of assimilating into new surroundings, research local networking groups and expat support organisations (live and online) and encourage membership. Language and cultural training play a significant part in helping individuals build new support networks, both personal and professional. Be sure that a strong internet connection will be available in the destination home, as a connection with family and friends in the origin country will be equally important. Each of these actions will go a long way toward ensuring a sense of belonging in a new host location while maintaining previously established relationships from 'back home.'
- **Think About Tax Considerations When Work Permit Assistance is Provided:** If the company will be covering the spouse/partner's work permit, it will be necessary to define whether or not the spousal/partner income will be equalised in full, in part, or not at all. This should be defined in the organisation's tax equalisation policy (spousal/partner income is typically classified as personal income), as the implications of the spousal/partner income on tax equalisation costs can be significant⁸.

⁸<https://www.sirva.com/learning-center/blog/2020/02/19/supporting-accompanying-spouses-partners-during-relocation>

To facilitate understanding in this paper we will be looking at some of the types of Partner Accommodation as presented by the American Association of University Professors which possible can be adapted to youth employment in IT sectors⁹:

Membership in a Higher Education Recruitment Consortium (HERC) or another network: HERCs are formal organisations of area colleges already established in some regions and states, such as Southern California, New England, Missouri, and New Jersey. 10 HERCs provide a variety of services for listing and sharing open positions that can be invaluable in assisting academic partners. HERC membership costs vary by the size of the institution, making this option, where available, particularly useful for smaller institutions without the resources to establish partner-accommodation programs. Institutions may also establish less formal networks for sharing information about openings at nearby colleges and universities or in local businesses and nonprofit organisations. Such arrangements represent the least controversial option for offering accommodation to academic partners and may be particularly useful for those colleges and universities that are unable to offer extensive assistance because of limited resources. In some regions, however, the lack of urban concentrations or the absence of nearby universities may make these options less workable.

Assistance for relocating partners: Human resource offices or specialised partner-assistance offices can also provide help with résumés and interview preparation. In addition, they can offer relocating partners other assistance, such as identifying child-care facilities or potential housing. Such help can ease the transition to a new region

Bridging Positions: Some institutions offer the possibility of a “bridging” position or a temporary fellowship to allow the institution time to identify a full-time line or to provide short-term support while a partner searches for a position. Bridging positions can be particularly useful for academic partners because of the timetable of faculty searches. Such positions should be clearly described as temporary so as not to raise expectations about the provision of permanent employment

⁹<https://www.aaup.org/NR/rdonlyres/E8B6FE51-3765-4528-AC4F-874C8ECDB7D9/0/PartnerandDualCareerAppointments.pdf>

Provision of a permanent position for a faculty partner: An institutional offer of a new tenure-track (or equivalent position) line for a partner has been called the "holy grail of dual-career accommodation." In other cases, an institution may offer full- or part-time contingent positions to the partners of newly appointed faculty. At least one study has shown that faculty members with positions at the same institution may experience greater satisfaction and find it easier to balance work and family responsibilities, making this option attractive from the candidate's perspective. Such positions, however, while providing the most direct assistance for dual-career couples, can also present problems for both the institution and the newly appointed faculty member. Of particular concern is any policy that would increase the number of contingent faculty for the sake of partner accommodation or that would limit the benefits or the opportunities for promotion for those partners appointed under such arrangement

Assistance to graduate students: When the partner is completing graduate studies, an institution can provide teaching opportunities, library privileges, or other assistance toward completing the degree. This is temporary assistance, however, and may not satisfy the long-term needs of a dual-career couple.

Shared positions / Dual-Career Appointments: In this type of arrangement, partners share a tenure-track position with defined responsibilities for teaching, research, and service. The shared position may be 100 percent or more of a full-time position with, for example, each partner appointed at 50 percent of a full-time position, or it may be an arrangement in which one partner is appointed at 60 percent and the other at 50 percent for a slightly more than full-time position. This form of accommodation, however, is usually limited in its applicability to faculty members in the same or closely related disciplines and to those who do not require two full-time salaries. Because the tendency among academics to form couples based on similar or related areas of specialisation appears to be on the rise, shared positions may become even more desirable soon.

2. Outline of best methods and practices

As outlined by the AAUP in their reflective paper on recommendations on Partner Accommodation and Dual-Career Appointments, accommodating of spouse/ partner as a possible dual career appointment does have benefits and to be carried out effectively needs

sound policies. Among the benefits, AAUP mentioned is an increase in the number of women seeking employment.

When it comes to offering spouse/ partner accommodations the IT sector must embrace such a notion to apply policies that would accommodate without prejudice all candidates and employees with issues related to race and gender.

Recommendations

- Ideally, the IT sector providing the accommodation at any level should have worded policies that cover all appointments rather than rely on ad hoc arrangements. Such policies should be available to all couples, not just those in heterosexual marriages.
- Information on these policies should be made available to all candidates.
- ***Duty of Information:*** There is a moral obligation to provide information regarding e.g. the work permit situation in the host location, support options provided by the corporation incl. career options, career alternatives, further education, integration, and networking in the host location.
- ***Duty of Prevention:*** There is a moral obligation to maintain psychological health and to avoid frustrated, isolated, or depressed partners, and failed assignments.
- ***Duty of Intervention:*** There is a moral and business obligation to intervene if provider support is not meeting the needs of the relocating partner.
- ***Duty of Control:*** There is a moral and a business obligation to select the appropriate and reasonably priced external service provider and to control the quality of service and satisfaction of partners¹⁰.

3. Case Studies

It seems that the practice of accommodating both employee and spouse/partner is a practice more commonly found in academia for positions of senior lecturers. The following two universities offer rent accommodation programs subsidised by the university and also support for the spouse or partner to be employed by the same university.

The Washing State University offers to fund that after applying in writing, the university can offer temporary accommodation of residing quarters for employee and spouse/ partner for up

¹⁰ <https://www.netexpat.com/partner-support-why-should-i-invest>

to three years of funding¹¹. At the same university, arrangements for temporary employment are offered to spouses or partners. Unless there are no appropriate existing vacancies, an employee can make a written request and the university can assist with temporary employment.

The University of Maine has a spouse and partner accommodation policy and program. The program mainly consists in assisting the spouse/partner to find the ideal job opportunity within the same campus and affiliates¹².

Employees could also operate within or encourage government initiatives like the ones mentioned below where digital nomads are encouraged to move and work within the walls and shores of other countries and villages.

Individual towns across Italy, France, and Spain have been taking part in initiatives where little villages like Rieti and Santa Fiora in Italy are ready to pay more than half the rent for a good substantial number of months. Some of these initiatives stretch to even pass you a money grant for having a newborn whilst residing there¹³.

The island of Malta in the Mediterranean is offering a Nomad Residence Permit for non-EU nationals the right to live in Maltes whilst being employed in another country¹⁴.

Some of the employees interviewed mentioned that there are online gaming companies especially some big ones that offer relocation services and accommodation services, sometimes up to one year of assisted living. At times this compromise is that accommodation is either found or offered in apartments that are being leased by the company or partially pay part of the monthly rent.

Not exactly fitting under accommodation but mentioned here as extraordinary benefits. Many employees mentioned that their companies offer Well Being benefits. Sometimes up to 300 to

¹¹ <https://policies.wsu.edu/prf/index/manuals/60-00-personnel/60-15-partner-spouse-accommodation/>

¹² <https://umaine.edu/hr/career-opportunities/spouse-and-partner-accommodation-policy/>

¹³ <https://www.travelinglifestyle.net/these-italian-towns-pay-digital-nomads-to-come-and-work-remotely/>

¹⁴ <https://www.maltaimmigration.eu/malta-nomad-residence-permit/>

500 euros per year and these are over and above bonuses. These Well Being benefits at times vary according to packages offered and from one company to another. Some of the examples include:

- Massages
- Gym subscriptions
- Flight reimbursements
- Sport club memberships
- Purchase of technological equipment

Health coverage and insurance

1. Definition:

By definition, Health coverage is referring to a situation whereby entitlement to payment or reimbursements; health care costs are covered (under stipulated arrangements) This could be offered in connection with employment or a government program¹⁵.

Insurance is an agreement usually through a contract represented by a policy in which an individual or entity receives financial protection or reimbursement against losses or sickness¹⁶.

2. Outline of best methods and practices

Pretty much all vacancies that are related to online gaming companies and IT-related big corporations all offer a basic benefit for working with the company's private hospital and clinic health insurance.

The following are 2 case examples of basic IT-related position benefits within the company

Energy Careers:

¹⁵ <https://www.healthcare.gov/glossary/health-coverage/>

¹⁶ <https://www.investopedia.com/terms/i/insurance.asp>

- Funding for training and self-development.
- One month of remote work from abroad per year.
- Fruit, snacks, and Monday breakfasts.
- Private Hospital and Clinic Health Insurance.
- Gym/Travel Allowances¹⁷.

Kindred:

- Our office has a sports hub if you want to challenge a mate to a game of table tennis or darts.
- Fancy a good cup of coffee? We have an in-house barista to get you that perfect cup!
- Many social events to take part in (Melbourne Cup is just one of them).
- Great work-life balance and flexibility.
- A continued commitment to employee development.
- Employee share program.
- Life insurance and income protection plans.
- Wellness benefits.
- Great work-life balance and flexibility.

3. Case Studies

From the 3 interviewed employers for this study, health coverage and insurance are a benefit that only Betsson Group can offer to their employees. As one of the main online gaming companies present in Malta, they greatly amplitude to hunt for the best possible employees. As part of the benefits that come with a competitive salary, they offer comprehensive health coverage and insurance.

For the other 2 interviewed employers this concept is considered practically impossible. It would involve too much cost to the company and would not make a difference if not accompanied by an extraordinary competitive salary.

One employee mentioned that in some senior positions employees were being offered health coverage and insurance that is extendable also to spouses/ partners.

¹⁷ <https://energycasinocareers.com/>

For this research, we thought to include a couple of inserts on Sick and Leave days in this section.

Three of the employees interviewed who work for big gaming companies mentioned that as part of incentives to accommodate new parents their companies offer extra sick and leave days than those stipulated by local law.

One company even offers the mother five extra sick leave days per year concerning her child's needs.

One other company offers up to two weeks of paid paternity leave to the father. One must note that this is quite a welcoming initiative compared to the one-day paternity leave to the father granted by local law¹⁸.

Other employees mentioned that their companies have basic assistance when it comes to supporting newborns and young children, however, they allow case by case scenarios. Employees in this company can make their requests according to their needs to the human resources department. This can include more flexible time on and off the desk and remote working,

Mentoring and coaching

1. Definition:

For this research, we are understanding the concept of Coaching as a "thought-provoking and creative process that inspires to maximise personal and professional potential" and Mentoring as "an employees training system under which a senior or more experienced individual (the mentor) is assigned to act as an advisor, counsellor or guide to a junior or trainee"¹⁹ ”

This process is linked to the direct involvement of the IT-related work and otherwise personal growth of the employee.

¹⁸ <https://timesofmalta.com/articles/view/fathers-petition-parliament-to-extend-paternity-leave-as-soon-as.890482>

¹⁹ <https://www.kent.edu/yourtrainingpartner/know-difference-between-coaching-and-mentoring>

2. Outline of best methods and practices

Also in this case many of the biggest companies do offer a period per contract of mentoring and coaching. However, it is good to mention that for many companies there are less and fewer initiatives taken for self-development. Also when it comes to IT skills development unless it is something related to a specific task or assignment that the employee is into, the company does not offer further training. This seems to be instigated by the fact that the market attracts competition and competitive candidates to work within. Many of the positions within bigger and established companies require a candidate minimum of 2 or 3 years of experience in the related field. Thus what often happens is new graduates start working with smaller companies where they would have opportunities to 'learn the ropes. However the moment they have the opportunity to move with a bigger company which is offering better pay and benefits they will flee.

3. Case Studies

In the case of study C, Mr. Gordon Theobald refers to the issue as of major importance. Since he operates within startup companies he sees that training is quite important for them. Being a small company they could only employ one, maximum of two employees per project on a specific task. He mentioned that it is viable for the company to offer training so that task is carried out efficiently and autonomously by the employees. Sometimes a new type of technology is needed to be learned. Where and when possible they hope that the employee stays on with them at least till the end of the project.

Concluding remarks

Case study A

Case study B

Case study C, Mr. Gordon Theobald:

Startup companies never have the chance to compete with bigger companies. Many junior IT graduates spend from nine months to one and a half years maximum. This is giving and taking the time frame of a small or medium project and then they leave.

He is aware that here we are looking at completely different ways of working, and it is up to the IT employee to choose and see what fits the individual best. He has accepted to work this way and it works. It has its hiccups but somehow so far it works. Gaming and big companies are not very popular all the time. Some come and go, some pass through phases that would like to work in big companies and big projects for some time, and others would like to contribute to something smaller but more productive and they can have ownership. In this case, it would be an investment for the individual. These are two different perspectives. Here it is a different mindset. People working here could easily have three times as much as those paid here if they work for a gaming company. Time and hours here are also not fixed, we work as needed and are flexible. Usually, big gaming companies would have more fixed and predictable times.

Many foreign big companies work remotely since we are a small company. For us, we must work together and we prefer to work together as communication is very important.

Their model is that for value for money work, he outsources. Once a project is developed and is at hand, they start to think about employing someone. Now what happens is that many companies give sweat equity. In such a system the employee is being given a share of the project, a part of the ownership. This does not happen in bigger companies. Sometimes the percentages of ownership can be substantial. This can have its perks for the developer, especially for the advanced one as now they are owning part of this project and this can even make them earn some good money.

If you start a senior IT position within a gaming company you might enjoy the thrill of working on big projects and perhaps also be responsible for their execution. Whilst if you are in a junior IT position you might be doing just about anything that the project needs and you are never part of the complete project.

In small start-up companies, you have more satisfaction than even as a junior you could be working on solid, innovative projects. The satisfaction is much greater and it also gives a lot of input to your CV. Also, you could be working on a big project that needs to be enacted. This happens after the outsourcing part and the project would be already written. So someone working with us could be managing a unique project. This means that even as a junior, your role would be to monitor, follow and manage a team of experienced developers with particular expertise. This is a great opportunity and incentive to learn for those who would

like to one day run bigger projects or invest in becoming experts in one particular field like AI or the development of a particular IT language.

He believes that if small startups join forces they could benefit much more, both on resources, projects, and packages that they can offer to their employees. However, this is not too much possible in Malta as there is not too much of a mentality of doing this. He believes that there is a lot to gain when we collaborate. Between outsourcing opportunities, and ideas, and offering better packages, collaboration could be great and this would help us also to compete abroad with bigger companies, not between us.

Bibliography:

- ACC Advisors Ltd. (2022, May 12). *Malta nomad residence permit*. Malta Immigration. Retrieved July 19, 2022, from <https://www.maltaimmigration.eu/malta-nomad-residence-permit/>
- Chapman, S. (2020, February 19). *Supporting accompanying spouses/partners during relocation*. Supporting Accompanying Spouses/Partners During Relocation. Retrieved March 19, 2022, from <https://www.sirva.com/learning-center/blog/2020/02/19/supporting-accompanying-spouses-partners-during-relocation>
- Energycareers. (n.d.). *Homepage*. Retrieved July 19, 2022, from <https://energycasinocareers.com/>

- Guba, W. (2021, February 17). *PARTNER SUPPORT – Why Should I Invest?* Netexpat. Retrieved March 19, 2022, from <https://www.netexpat.com/partner-support-why-should-i-invest>
- Health coverage. (n.d.). In *Healthcare* (revised 3 ed.). healthcare.gov. Retrieved March 19, 2022, from <https://www.healthcare.gov/glossary/health-coverage/>
- Jobsplus. (n.d.). *Jobsplus*. Retrieved March 19, 2022, from <https://jobsplus.gov.mt/employers-mt-MT-en-GB/employing-persons/employing-persons-disability>
- Kagan, J. (2022, July 18). *What is insurance?* Investopedia. Retrieved July 19, 2022, from <https://www.investopedia.com/terms/i/insurance.asp>
- *Know the difference between coaching and mentoring*. (2017, July 5). Kent State University. Retrieved March 19, 2022, from <https://www.kent.edu/yourtrainingpartner/know-difference-between-coaching-and-mentoring>
- Magri, G. (2021, August 2). *Fathers petition parliament to extend paternity leave as soon as possible*. Times of Malta. Retrieved March 19, 2022, from <https://timesofmalta.com/articles/view/fathers-petition-parliament-to-extend-paternity-leave-as-soon-as.890482>
- NetExpat. (2019, August 14). *RPS FACTS : RESHAPING PERSPECTIVE*. Retrieved March 19, 2022, from <https://www.netexpat.com/rps-facts-global-mobility-going-forward>
- Office of Human Resources. (2022, February 3). *Spouse and partner accommodation policy and program - office of human resources - university of maine*. Retrieved March 19, 2022, from <https://umaine.edu/hr/career-opportunities/spouse-and-partner-accommodation-policy/>
- *RPS FACTS : RESHAPING PERSPECTIVE*. (2019, August 14). Netexpat. Retrieved August 14, 2019, from <https://www.netexpat.com/rps-facts-global-mobility-going-forward>
- Spouse. (n.d.). In *Lawinsider Dictionary* (based on 231 documents ed.). Lawinsider. Retrieved March 19, 2022, from <https://www.lawinsider.com/dictionary/spouse>
- U.S. department of labor. (n.d.). *Job accommodations | U.S. department of labor*. Official Website of the United States Government Department of Labour. Retrieved March 19, 2022, from <https://www.dol.gov/general/topic/disability/jobaccommodations#:~:text=A%20jo>

[b%20accommodation%20is%20an,to%20work%20schedules%20or%20responsibilities](#)

- Vincej, V. (2022, April 23). *These Italian towns pay digital nomads to come and work remotely*. Traveling Lifestyle. Retrieved June 19, 2022, from <https://www.travelinglifestyle.net/these-italian-towns-pay-digital-nomads-to-come-and-work-remotely/>
- Wahington State University. (n.d.). *PARTNER AND SPOUSE ACCOMMODATION* (60.15). <https://policies.wsu.edu/prf/index/manuals/60-00-personnel/60-15-partner-spouse-accommodation/>

Working conditions, supportive environments and psychological aspects

In the past few decades, there have been significant advances in automation, digitization, machine learning, artificial intelligence and other technology (Makridakis, 2017). Rapid advances in artificial intelligence, also referred to as machine intelligence, have expanded what is now possible with automation and robotics (Frank et al., 2019).

Developments in technology have not only changed the jobs available to us but also changed the nature of work performed. Jobs have become increasingly service-focused and cognitively complex and demanding. A large proportion of employees are now working as knowledge workers or in a service context. For example, the US Central Intelligence Agency (2017) estimates that 63% of the world's GDP is created through the service industry.

Technological advances have enabled the workforce to access unlimited amounts of online information, to rapidly complete routine cognitive tasks (e.g. via data analysis software), to deliver services in-person or remotely (e.g. remote education) and to have dynamic collaborations with individuals or teams across different time zones around the world. Overall, technology has increasingly set the pace and method of work, even in industries which traditionally had far greater decision latitude – such as finance, science, education and health.

The disruptive influence of technology in changing workplaces has also played a role in the shift from the tradition of one job and employment setting to the new 'boundaryless' career (Rodrigues and Guest, 2010). Through the advantages of technology, organizations are becoming increasingly fluid, interconnected and global, resulting in a significantly higher likelihood of movement both across and within organizational boundaries during an employee's working life. Advances in technology also mean that job roles and tasks are regularly being

redesigned, resulting in greater expectations for employees to update or acquire new skills for different roles across their career.

Technology in workplaces is typically designed to increase productivity and improve organizational outcomes, with often little consideration of the impact on employees. For example, the pervasive presence of technology can produce a 'norm of responsiveness' which has been linked to increased perceived demands, unrealistic performance and productivity expectations, and feelings of increased mental exhaustion (Perlow, 2012). Studies have shown that technology can accelerate work pace to the extent of increasing employee stress, overload, exhaustion and burnout (Barley et al., 2011; Chesley, 2014; Maier et al., 2015; Murray and Rostis, 2007; Su and Mark, 2008).

The pervasive use of technology in the workplace is also accompanied by an increase in screen time and sedentary workplace behavior (Waters et al., 2016; Yang et al., 2017) which has been linked to poorer physical health outcomes, such as the increased likelihood of developing physical health problems like diabetes, heart and cardiovascular disease, musculoskeletal disorders and obesity, often with concurrent mental health issues (Duncan et al., 2012; Ford and Caspersen, 2012; Wilmot et al., 2012). Prolonged screen time and sedentary workplace behaviors have also been found to be directly linked to mental health issues including increased self-reported symptoms of depression and anxiety (Machav et al., 2017).

Organizations are also increasingly using artificial intelligence technologies to complete work previously performed by humans. For example, many organizations now use automated 'intelligent self-service' systems, designed to enable the customer or client to co-produce the service, with the assumption that customers have the skills, training or support to do so. Examples include ordering food via mobile phone apps, checking in baggage at the airport, booking accommodation online and using self-service checkouts at the supermarket. While many customers appreciate the convenience and time saved, the systems do not always function as designed and are generally only useful for standard customer requests and needs. As a result, it is not uncommon that in many service roles, when the customer or client interacts with the employee, customers are more likely to experience high levels of frustration, anger and often thwarted expectations (Groth and Grandey, 2012). This increases the demands employees experience, as they are likely to have to manage customer mistreatment and engage in emotional labor (Groth et al., 2019). These additional demands, both internal and external, can significantly deplete personal resources and resilience and place employees at greater risk of burnout and poorer mental health (Schaufeli et al., 2009), as well as increasing employee

withdrawal behaviors such as increased sick leave (Nguyen et al., 2016), turnover (Goodwin et al., 2011), and employee sabotage against customers such as abruptly ending a service call (Wang et al., 2011).

In addition to the effects on individual employees' experiences of work, technology can also deplete the quality of interpersonal relationships between employees and the social capital within organizations. For many employees, the interactions within an organization are increasingly mediated by systems and technology. For example, we log work health and safety issues on a portal; we do not call a person and emails are generated by systems accounts with 'do not reply' and no contact information. This is likely to be particularly detrimental when employees most need support.

The evidence is clear that social support and being part of a supportive community in the workplace is important (Grant et al., 2010). A review of 14 longitudinal studies found that high psychological demands and low social support were the strongest and most consistent factors associated with an increased risk of depression (Netterstrom et al., 2008). In addition, low work-related social support is associated with an increased likelihood of mental health problems and/or prolonged sickness absence (de Lange et al., 2003). A prospective cohort study of 9631 male employees of France's national gas and electricity company found that low satisfaction with social relations and low social support at work was associated with a 10%–26% increase in sickness absence which persisted over 6 years (Melchior et al., 2003). Poor work relationships have been found to be associated with an increased risk of poor mental health and reduced physical health. In contrast, positive human interactions have been associated with healthier patterns of cardiovascular, immunological and neuro-endocrine responses (Heaphy and Dutton, 2008).

Overall, technology is negatively impacting mental health in the workplace in many ways by increasing demands, reducing resources and changing how employees view the future, which all have hidden and direct costs to employers and employees. Considerable research now highlights that work factors such as poor job design, high job demand, low job control and high effort–reward imbalances are associated with a greater risk of developing common mental health conditions (Harvey et al., 2017). Job design theories such as the job characteristics model (Hackman and Oldham, 1980) and Job Demands and Resources theories (Schaufeli et al., 2009) stipulate that, to enhance mental health, we need to design jobs that have resources to help balance or respond to high demands. Resources such as control, support, high-quality feedback and learning opportunities are all positively associated with work-related well-being.

Fortunately, there are many ways in which technology can, and has been, used to successfully design work to help safeguard the mental health of employees. We now review the ways in which automation and advances in technology have had a positive impact on workplace mental health and employee well-being.

When well-designed and implemented to consider the impact on how people do their work, technology systems can function to reduce demands. When automation alleviates cognitively taxing work such as literature searches as well as repetitive administrative tasks such as data entry tasks, employees may experience less fatigue and spend more time on autonomous, creative, deep-thinking work or engage in meaningful interactions with customers and clients. For example, nurses can spend less time recording and filing patient data and more time providing quality care to their patients. Household, Income and Labor Dynamics in Australia (HILDA) survey data show that the most easily automatable job tasks, such as assembly line work and data entry, were also the tasks employees rated as least satisfying to complete (AlphaBeta, 2017). Automation has the potential to reduce job dissatisfaction and potentially enhance well-being by freeing up time for employees to use their creative, transferable and non-automated skills.

Automation has also improved workplace safety and reduced the risk of physical workplace injuries (Horton et al., 2018). In most countries including Australia, automation has replaced many physically dangerous and tedious tasks previously completed by hand such as repetitive heavy lifting work (Horton et al., 2018). The decrease in physical workplace injuries should simultaneously reduce the likelihood of employees incurring psychological problems stemming from such injuries, including the mental health sequelae of injuries, poor motivation to return to work, isolation, frustration and anger (Duncan et al., 2012; Ford and Caspersen, 2012; Wilmot et al., 2012).

Technology can also promote good mental health practices. One of the major benefits from recent advances in technology is eHealth and proactive workplace mental health interventions. In the past decade, research has proliferated in eHealth where interventions are supported by electronic and technological processes and digital communication. eHealth interventions with evidence-based therapeutic techniques can support and create significant improvements for those with common mental health conditions such as depression and anxiety. For example, meta-analytic evidence suggests that mindfulness-based eHealth interventions can reduce symptoms of common mental health conditions among employees (Stratton et al., 2017). Similarly, another recent review and meta-analysis found that digital mental health

interventions delivered in the workplace can improve psychological well-being and work effectiveness among employees (Carolan et al., 2017).

An additional benefit of eHealth interventions is providing accessible and easily disseminated material to workplaces regardless of their size or geographical location. For example, a cluster randomized controlled trial (RCT) of 24 Fire and Rescue and Hazmat Stations across NSW found that a training program delivered completely online enhanced psychological resilience, a feature of a mentally healthy workplace (Petrie et al., 2018), among active first responders at 6-month follow-up along with overall mindfulness, optimism, active coping and seeking support from others (Joyce et al., 2019).

Another example of a proactive workplace mental health initiative delivered solely online is mental health training for managers. A recent RCT (Gayed et al., 2019) found that an online manager training program resulted in significant improvements in managers' confidence and led to changes in responsive and preventive behaviors of initiating conversations and redesigning work that are important in creating a mentally healthy working environment for staff. This type of online mental health training appears to be an effective and scalable way to improve managers' confidence and workplace practices around mental health to support the mental health needs of their direct report employees.

However, technology is not only affecting the work we do but also creating opportunities to change where and when we work.

'Flexible working', 'telework' and 'remote work' refer to the use of information technology to work from home or any other location outside of the office (Spreitzer et al., 2017).³ In planning the National Broadband Network (NBN) in 2012, the Australian federal government estimated that 12% of the working population would be regularly working remotely by 2020. However, a large-scale global survey conducted in 2019 by the International Workplace Group found that across 100 nations over 50% of employees work in some capacity outside of their main office locations for 2.5 days a week or more. The same survey found that about 74% of the Australian respondents considered flexible working to be the 'new normal' (International Workplace Group, 2019). In addition, based on 2005–2016 US Census Bureau data, working from home (among non-self-employed employees only) increased by 140% (Global Workplace Analytics, 2018).

Flexible working is often posited in the management literature as a win–win: employers have a more productive workforce which uses less space and is cheaper to house, and workers have a

better work–life balance, increasing job satisfaction and organizational commitment (Bloom et al., 2015). However, this common representation of flexible work ignores potential negative outcomes, such as inadequate recovery from work at home and disruption of social connections and isolation (Bloom et al., 2015). Flexible working may have major implications for employees' well-being. The literature on the relationship between flexible working and employee mental health is complicated and findings to date are mixed. However, the general pattern of findings suggests that flexible working can be used to improve employee mental health through mechanisms such as increased autonomy and flexibility. If, however, it is not managed well, flexible working can be a significant risk to employee mental health.

Despite being physically disconnected from work colleagues and office space, employees who work flexibly may not be able to mentally disconnect from their work during their personal time. The flexible work literature notes that without clear boundary planning, issues with work–home interference (WHI) or conflict are likely to arise. For example, one study found that information and communication technology use at home negatively impacts the quality, quantity and consistency of sleep disrupting the process of psychologically disengaging from work, but only among those who did not establish boundaries around work-related technology use at home (Barber and Jenkins, 2014). Working from home can reduce the typical cognitive, emotional and physical restorative effects of being at home (Baines and Gelder, 2003; Geurts and Sonnentag, 2006; Hartig et al., 2007).

Working from home or other remote locations may increase feelings of social isolation and loneliness by limiting opportunities to develop meaningful relationships with colleagues and lead to a deterioration of social relationships at work (Golden, 2006; Monge et al., 1985; Nardi and Whittaker, 2002). Employees who perceive higher levels of workplace exclusion tend to have lower levels of well-being (Hitlan et al., 2006) and higher levels of distress (Wu et al., 2012). Feelings of loneliness are also a source of chronic stress, and associated with poorer sleep, dysphoria, depression and anxiety (Cacioppo et al., 2002; Campione, 2008). The decrease in visibility and social interactions with colleagues in the traditional workspace has also been shown to lead to anxiety around being perceived as less involved or committed to work, of being left out of social opportunities and important organizational decisions, and fears about career stagnation (Desrosiers, 2001; Duxbury and Neufeld, 1999; McCloskey and Igarria, 2003).

Interestingly, there is evidence to suggest that workers are increasingly blurring the psychological and physical boundaries between work and family life as a result of the increase

in employee workload in recent decades (Allen and Shockley, 2009; Kossek and Michel, 2011). There is, however, evidence that combining the work and home environment can increase conflict between work and home roles (Butts et al., 2015; Glavin and Schievmann, 2012; Mann and Holdsworth, 2003; Mirchandani, 2000; Sullivan, 2003). For example, one study found that time spent responding to emails outside of work time has been associated with greater levels of negative emotions (e.g. anger) and, in turn, predicted increased work–non-work conflict (Butts et al., 2015).

While flexible working has been associated with increased work–family conflict, there are also findings suggesting the contrary. Flexible working can allow individuals to align work hours and demands with the requirements and schedules of family members such as child care hours and school pick-up times, which can help to reduce time-based conflict and work–family conflict (Duxbury et al., 1998; Kirchmeyer, 1995; Raghuram and Wiesenfeld, 2004). Increased flexibility around work hours, such as start and end times, has been associated with more positive employee mental health outcomes (Joyce et al., 2010). This is consistent with evidence that greater levels of control over where, when and how employees complete their tasks can enhance their feelings of autonomy (Elsbach, 2003; Hackman and Oldham, 1976; Standen, 2000), which has been linked to higher levels of psychological well-being (Park and Searcy, 2012).

Working flexibly might also help to protect employees from mental health issues which can arise during work-transition periods by allowing a more gradual (as opposed to abrupt) retirement process and more gradual return-to-work transitions for those employees who have experienced mental health difficulties and are unable to immediately return to the office, as well as new parents who want to spend some of their working hours at home. Buffering the transition back into or out of work can help minimize anxiety, distress or depressive symptoms from abrupt changes to work life (Allen and Shockley, 2009).

Flexible working can also help bring employment opportunities to individuals living in rural or remote areas, where mental health-related issues such as high rates of depression, unemployment and suicide are typically more prevalent (Harvey et al., 2017). A 2012 survey of Australian workers (Colmar Brunton Research and Deloitte Access Economics for the Commonwealth of Australia, 2013) found that 70% of those living in regional and remote Australia and not currently working would engage in flexible working if given the opportunity. Organizations which offer flexible work opportunities might also signal to employees their willingness to adjust the work environment to cater to employee needs. Scandura and Lankau

(1997) also suggested that organizations who allow employees to work from home signal that they care about protecting employee well-being. This messaging could partly explain why flexible working can reduce turnover intentions (Rhoades and Eisenberger, 2002).

There are also likely to be additional benefits of flexible work such as reducing stress associated with the time, costs and hassles of commuting to and from work. The time saved by not commuting might also provide more time to engage in other activities such as sports classes, meditation and recreational activities with family and friends which can help to mitigate work-related stress (Greenhaus and Beutell, 1985; Konradt et al., 2003). Figure 3 provides an overview of the changes in the future of work, and the effects on the workplace and workplace mental health.

As technology continues to create ‘affordances’ or possibilities for how/where we work, it is important that we research the impact of these possibilities on mental health. The influence of technology on workplace mental health depends on how it is implemented, organizational norms around its use, and employee perceptions of its effect on their role. To create workplaces where employees benefit from technology, we need a closer collaboration between researchers, psychologists, user experience specialists, industry and government bodies to gain a better understanding of the impact of technology through multiple lenses – not just the lens of productivity. This collaboration would benefit from a preventive focus, guided by principles of good job design.

There have been several systematic reviews and meta-analyses on the design of work and the effects on mental health. For example, West et al. (2016) found two factors had clinically significant effects on physician burnout, specifically reduced working hours (demands) and participant involvement in developing modifications to clinical work processes (participatory practices). A systematic review by Egan et al. (2007) on participatory interventions in organizations on mental health outcomes found support for the ‘demand–support–control’ model (Karasek and Theorell, 1990) particularly where control over work was increased. Similarly, Tsutsumi et al. (2009) found mental health improvements from a cluster randomized controlled trial of a team-based, problem-solving participatory intervention. This research suggests that involving employees in the design of the technology–work interface is important for mental health outcomes.

Organizations could consider hiring cognitive, organizational and human factors psychologists to design and implement initiatives which promote more ‘mentally healthy’ use of technology

at work. Within Australia, there are a growing number of mental health research institutions – such as the Black Dog Institute and Beyond Blue – as well as smaller businesses which offer consulting services to organizations. These consulting services include partnering with organizations to help encourage the use of more ‘mentally healthy’ practices at work. Workplaces across Australia could benefit from making use of these services. A recent survey found that within NSW only 8.8% of workplaces have integrated sustainable practices aimed at promoting employee well-being and mental health (Donnelly and Lewis, 2017).

Organizations could also consider adopting an e-Health approach to implement prevention focused employee well-being programs. There is a need for more training programs to teach employees how to engage in good mental health practices, whether it is the importance of taking work breaks, trialing technology-free focused thinking sessions, or disabling unnecessary e-notifications. This form of an e-learning approach is becoming an increasingly attractive option to organizations as it enables training to be delivered universally across workforces in a consistent, timely and cost-effective manner. Online training on workplace mental health can also assist many organizations to overcome issues related to cost, availability, accessibility and other factors which may otherwise make training unviable.

Change management strategies can also play a key role in mitigating adverse mental health effects associated with introducing new technology to the workplace. As indicated by Vieitez et al. (2001), it is not uncommon practice for senior management to implement new technology systems without seeking input from their employees. Employee participation in and perceptions of technological change in the workplace can play an important role in employee mental health, particularly how they perceive the new technology will impact their job security and whether they have the skills to adapt to its use (Brougham and Haar, 2018; Vieitez et al., 2001). In line with evidence from longitudinal research, when organizations introduce new technology to the workplace, management can maximize employees’ psychological adjustment to the change by providing open and realistic communication about how the new systems will impact work tasks, and by delivering clear and timely training around its use (Petrie et al., 2018; Schweiger and Denisi, 1991).

Considering the pace and scale at which technology is redefining workplace practices, targeted action is needed to equip current and prospective employees with a future-proof skill set. The World Economic Forum (2016) noted an ability to understand and use data – both critically and creatively – will be imperative in an age of increasing computing power. A large proportion of future jobs will also require science, technology, engineering and mathematics (STEM)-related

skills (Office of the Chief Scientist, 2013). However, analyses of future workplace trends are increasingly highlighting that future employees will need a balance of both technical and nontechnical skills to succeed in a technology-heavy, global, competitive job market (Torii and O'Connell, 2017). To demonstrate a competitive advantage over others, employees will not only need to show psychological flexibility in readily adjusting to technology-related workplace changes but also demonstrate skills which machines cannot easily replicate (Manyika, 2017). Patterns across survey findings suggest that employers will increasingly value employees who demonstrate high levels of interpersonal skills, emotional intelligence, self-management, problem-solving, adaptability and mental stamina (World Economic Forum, 2016).

It is important for organizations that offer flexible working arrangements to recognize that work practices that are designed for co-located work groups may not work for their flexible working employees. It is arguably more important for organizations to critically examine and formulate work practices for their flexible workers than for their co-located work groups, given that flexible workers cannot rely on learning via social observation and modelling at the office, or via communicating with others on a regular but informal in-person basis.

Organizations also need to establish clear norms for flexible workers to assist in mitigating the mental health issues flexible workers have reported as challenging (Allen and Shockley, 2009). For example, organizations could consider working more closely with researchers and psychologists to understand how to best establish a psychosocial safety climate in their workplace. A psychosocial safety climate helps to communicate to employees that management is interested in protecting the well-being and mental health of their workers (Harvey et al., 2014). Creating a psychosocial safety climate for flexible workers includes establishing expectations on availability during non-working hours and setting reasonable boundaries around work-related technology use at home. Organizations could also consider collaborating with psychologists and researchers to trial initiatives such as those tested by the Boston Consulting Group where employees were given a smartphone-free night during the week (Perlow, 2012). Such formal practices may give employees license to better detach and recover from the stresses of work, which is particularly important for flexible workers whose work-home boundaries are already more blurred than those of the average co-located worker.

Organizations could also consider pairing employees who are new to flexible work with a more experienced flexible worker as a peer buddy. Grant et al. (2013) conducted in-depth interviews with teleworkers to identify factors which influence their well-being and work-life balance. Based on their findings, they suggest that pairing experienced flexible workers with less

experienced flexible workers could enable role-modelling of skills and behaviors which may help the less experienced flexible workers to adapt.

Organizations could also consider offering relationship-building resources for their flexible workers. A recent study found that organizational social support is associated with reduced psychological strain in flexible workers and that this relationship was mediated by the level of social isolation from other employees (Bentley et al., 2016). Other studies have also pointed to the importance of social support for employee well-being (Daniels and Guppy, 1994; Desrosiers, 2001; Thompson and Prottas, 2006). Considering these findings, organizations could periodically coordinate work lunches, informal social gatherings and office networking opportunities to help flexible workers build relationships with other flexible workers as well as co-located workers.

Organizations could also invest in innovative and collaborative technologies to ensure their flexible workers are able to easily maintain knowledge-sharing and social connectivity with their colleagues (Belanger and Allport, 2008; Dery and Hafermalz, 2016; Greer and Payne, 2014; Manca et al., 2018). Instant messaging software can help to mimic brief incidental conversations which normally occur in the office (McAdams, 2006). A growing number of organizations are also using enterprise social networking services, such as Microsoft's Yammer (<http://www.yammer.com>), which enable real-time communication over text, voice and video and are designed to facilitate engagement with others in the organization.⁴ In addition to mitigating feelings of isolation, relationship building resources can help to manage career progression concerns flexible workers may have about a diminished physical presence in the organization (Chapman et al., 1995; Taskin and Bridoux, 2003).

Several studies have highlighted that a central hallmark of good management of flexible workers involves allowing for autonomy while also maintaining close communication and providing support when and as needed (e.g. Frolick et al., 1993; Grant et al., 2013; Richardson, 2010). Managers could embed systems for routinely checking in on the well-being of their flexible workers, particularly due to the absence of in-person cues. Managers are also advised to explicitly encourage flexible workers to set reasonable boundaries around work-related technology use at home (Barber and Jenkins, 2014). It is also important that managers express reasonable expectations around response times and availability during non-working hours. In Australia, while there are excellent online frameworks and guidelines on how to best manage the well-being and mental health of remote workers (Comcare, 2013), there has not yet been much assessment of whether these guidelines are in fact implemented by organizations.

Governments need to invest in developing more evidence-based policies around the responsibilities of organizations in safeguarding mental health of teleworkers. In 2013, in the lead up to the National Broadband Network (NBN) rollout, the Australian Public Service Commission commenced a telework trial to inform policy development (Colmar Brunton Research and Deloitte Access Economics for the Commonwealth of Australia, 2013). The key performance indicators assessed for the trial included productivity, costs and savings associated with flexible working, as well as ease and efficiency of flexible working. Future trials could consider including indices of mental health and employee well-being (e.g. self-perceived levels of isolation, depression and other more objective indicators); the outcomes on such indicators need to play a critical role in the development of flexible work policy. Flexible work policies need to have comprehensive coverage of Occupational Health and Safety legislation issues for working at home or other non-regulated locations, including job design, hours of work, breaks and leave entitlements, as well as links to resources for support including employee assistance programs (Australian Telework Advisory Committee, 2006). Government bodies could also assist organizations in developing their own company policies, in compliance with relevant state and federal legislation. Company flexible work policies are valuable in establishing expectations for both managers and employees and are important in regulating the risks associated with flexible work (Comcare, 2013; WorkCover NSW, 1996). For example, we recommend organizations clearly articulate in their flexible work policies that flexible workers have access to the same level of entitlements and career progression opportunities as their office-based colleagues (Huws et al., 1997).

Given the high likelihood that most employees will work flexibly at some point in their career, educational institutions need to equip students with skills which will help them best adjust to flexible work. Employers perceive a range of skills as important to flexible working, including an ability to work independently, time management and technology-management skills (Sharit et al., 2009). In addition to ensuring schools and universities teach prospective employees critical flexible working skills, programs (e.g. in-house training) are also needed for existing employees. These programs enable existing employees to upgrade their skills and capabilities in managing the evolving requirements of flexible work, for example, in the use of communications technology and collaborative online software (Huws et al., 1997; World Economic Forum, 2016). Considering the ageing workforce, organizations, researchers and software developers could collaborate further to design technology and training programs

which accommodate the skill level and limitations of older employees (Fisk et al., 2009; Sharit et al., 2009).

Youth IT skills, assessment and evaluation

Today, most companies use a vast amount of information that allows them to adapt to the rapidly changing market environment. As such, information processing capabilities of companies now are an important element of competitiveness, and the productivity of IT departments and employees are the basis of such capabilities. The competitiveness of the employees has become important in IT companies and departments as well as in any other business field. In order to increase productivity and quality, IT organizations need to ensure that their employees have a high level of expertise. IT organizations should identify the necessary skills for their workforces and measure the current capability of their employees in order to determine how to improve them. That is, companies need to not only measure the job performance of their people, but also they need to measure their capabilities specifically and objectively.

IT professionals can perform many jobs, such as project managers, software engineers, hardware engineers, database engineers, network engineers, and so on. Each position requires different skills and abilities. Tools that can evaluate employees' level of skills objectively and quantitatively are needed. It is hard to measure their actual skill levels with only the number of working years, certifications, or paper test results. Assessment models and tools should be based on quantitative evidence that accurately represents a worker's level of professional knowledge and experience.

How to increase the competency of employees is always a concern for managers of IT companies (Munro, Huff, Marcolin, & Compeau, 1997). They likely need to ask the following questions: how can organizations evaluate the competency of employees and how can their job skills be improved? Also, how can their competency for specific jobs be measured, and what skills are needed for each employee to improve? Employees, even those in the same jobs, have different levels of competence with regard to skills, knowledge, and experience (Quiñones, Ford, & Teachout, 1995). If the competence of employees can be evaluated, managers can then easily find appropriate staff for a specific job or business. Also, companies can improve their employees' abilities and provide proper training for a more specific educational program if they know which levels of skills or knowledge are required by employers. In addition, trainers or managers can focus on the very specific levels of skills or knowledge that their employees need

to improve within their current job or any job they may work in the near future. However, it is difficult for companies and managers to have a great deal of detailed data on the capabilities of their employees. Furthermore, their evaluation systems sometimes tend not to be dependent on objective or quantitative methods, but rely on subjective evaluation by examiners such as managers, HR personnel or external consultants (Marcolin et al., 2000).

Most evaluation or assessment methods rely on surveys, interviews, paper tests, certification, or personal evaluation (Marcolin et al., 2000). The evaluation data may need to be based on specific and factual data in order that positions of trust can be effectively allocated to managers and employees. In particular, levels of professional skill need to be assessed objectively using reliable methods, and the results need to be expressed quantitatively and objectively.

The abilities of most of the professional workforce can only be vaguely estimated with regard to the length of their work experience and the job positions that they have had during their careers. Also, the professional skills of employees are hard to estimate with regard to the results of paper tests or certificates, because job ability cannot be assessed only with regard to the knowledge in their brains. In practice, the estimated result can be different with regard to their actual skills, depending on the amount and number of their experiences (Quiñones et al., 1995). Results can vary with regard to how long, how often and what tasks they perform (Quiñones et al., 1995). In other words, employee careers make it difficult to represent their actual work experience. It is difficult to assemble detailed information about the work experience of employees if one only has their resume or a personal evaluation by managers or a certification. Therefore, IT organizations need to have methods to collect information about the employee experience and to evaluate their skills based on specific performance.

The term, 'Competence' began to be widely used in David McClelland's article *Testing for Competence Rather than for Intelligence* in 1973. Ennis (2008) defined competency as "The capability of applying or using knowledge, skills, abilities, behaviors, and personal characteristics to successfully perform critical work tasks, specific functions, or operate in a given role or position" (p. 4). Competency can also be defined as "the knowledge, skills, abilities, and other attributes required to perform desired future behaviors" (Blancero, Boroski, & Dyer, 1996, p. 387). In other words, personal competency consists of knowledge, skills, and attitudes that are held by members of organizations. Each organization should be capable to define the required jobs and the related skills for their jobs systematically in order to achieve their objectives.

A competency model is used as a tool to develop and measure competencies systematically. A competency model can be defined as “a descriptive tool that identifies the competencies needed to operate in a specific role within a job, occupation, organization, or industry” (Ennis, 2008, p.5). A competency model is usually developed to meet an organization’s business needs and objectives on the basis of a generic framework.

Marcolin, Compeau, Munro, and Huff (2000) reviewed the various types of measurement methods found in the literature, and found that self-reports, hands-on-tests, paper-and-pencil tests and observer assessments can be included in these measurement types. Individuals assess their own abilities with self-report measures by themselves (Marcolin et al., 2000). This method is probably based on the survey methods that are most common and easy. However, it may be difficult to obtain objective results through using the method, because it depends on the subjective judgment of the individual. Hands-on tests require individuals to deal with specific problem-based evaluations by interacting with tools (Marcolin et al., 2000).

Paper-and-pencil tests that involve multiple choice questions include computer based tests. Paper-and-pencil tests tend to focus on questions about what can be done and what procedures can be used, but hands-on tests evaluate the actual performance of tasks (Marcolin et al., 2000). While a paper-and-pencil test is commonly used for the ease of administering and scoring, a hands-on test requires observation and responses by the observer. In regard to observer assessments, skills are rated by independent observers such as researchers, managers, and external staff, and a variety of methods such as interviews and behavior observation can be used (Marcolin et al., 2000). These methods can gather data quickly and easily, but may be recognized as inefficient due to the not inconsiderable costs involved.

These methods can be trusted in terms of the confidence required to assess the skills of candidates accurately so that the result is valid and reliable. Dowsing and Long (2002) suggest the following conditions to achieve trust in terms of measurement.

1. “The qualification is relevant to the required skills in practice, and this approximates to validity”.
2. “The examination is fair; that is, it tests those skills it is meant to test and only those skills, and this approximates to reliability”.
3. “The results of the examination accurately reflect the performance of the candidate, that is, the assessment of performance is correct”.

4. “The environment of the examination is controlled so that candidates are not allowed to cheat”.

Many of today’s research teams use electronic surveys to gather data and measure the development of web-based survey tools and customize them for participants. Dillman (2000) suggests that the advantages of web-based surveys are that paper, mail out, and data entry costs can be almost eliminated and that implementation time can be reduced. Also, the developed electronic system can be reused that saves on the cost of surveying additional respondents. However, Dillman (2000) also mentions the limitations of web based surveys in that not everyone can be involved in the survey, so this may not work with the total populations, and even if connected, the respondents will not necessarily be equally literate in terms of computer usage.

Many existing studies have focused on the elements of process and design required to measure job performance. These researches are concerned with the measurement and evaluation of employee work performed. Even though these to some extent involve the measuring of capabilities, they are based on subjective and non-specific methods. Moreover, studies that assess the skill level of competency are hard to find. Most companies have a tool to assess the achievements and capabilities of their employees. However, they only usually measure job performance or subjective and conceptual competencies such as leadership, communication capability and creativity. A company’s human resource representatives or managers can roughly guess employee professional skills by examining their certification or the accounts of their careers in their resumes. Thus, it is very difficult to find tools or research that evaluates the skills and capabilities of employees quantitatively.

Generally, the term ‘skill’ indicates a basic level of proficiency, such as how to handle or apply a specific tool and method. In addition, capabilities are related to the proficiency of skill adaption, and then competencies are aggregations of capabilities (Abraham, Beath, Bullen, Gallagher, Goles, & Kaiser, 2006).

IT organizations need to identify the current proficiency of the workforce and their skill needs in the near future. To do this, the skill requirements for IT professionals should be identified and classified as part of workforce research (Ang, & Slaughter, 2000). Furthermore, an assessment of employee capabilities and skill proficiency is critical to develop their competency and ultimately to meet the demands of business. Davis and Olson (1985) described the required jobs in the area of information technology as analysis, design, development, implementation,

support, and management of computer-based information systems, composed of software, hardware, people, procedures, and data.

As the literature review indicates, researchers tried to find the necessary skills for employees to achieve a successful career in their job area. However, the skills required for the IT workforce are changing along with the technology and business environment, so organizations need to keep working with educational institutions to identify changing skill requirements. (Goles, Hawk, & Kaiser, 2008).

Qualifications evidence shows the Information and communication technologies workforce to be a highly skilled workforce and ties in with occupational data which shows the majority of the workforce (63 per cent) hold Professional or Managerial level occupations.

Specific technical and technology skills are widely required at higher level skill areas particularly in the most common occupations of Software Professionals, Information and Communication Technology Managers, IT Strategy and Planning Professionals. A combination of higher and intermediate (Level 3) skills are more commonly required by those working in IT Operations Technicians, Computer Engineers, IT User Support Technicians, Graphic Designers and Telecommunications Engineers.

As well as a core set of technical skills, employers require business and interpersonal skills particularly where employees are client facing.

Basic skills and employability skills are prerequisite to nearly all occupations in the sector and employers tend to look for employees with higher or intermediate level skills, depending on the occupation. The IT professional standards outline Personal competencies as: Personal communications; Team Working; Critical analysis and decision making; Creative thinking; Problem solving; Personal self-development; English, Maths and IT user skills.

Management and leadership skills in the sector are predominantly required at higher skills levels and relate to non-technical skills (such as financial management and people management) and technical management skills. Business Competencies include: Business organizational awareness; Customer service awareness; Quality awareness; IT awareness and impact; IT financial awareness; IT legal and regulatory matters and ethics; Risk awareness. Leadership competencies are required particularly by Managers and senior officials but also by those working in professional capacities or with teams: IT strategy, policy and governance; IT Quality

management; Customer Service Management; IT financial management; IT Human resource management; IT risk management; Entrepreneurship.

Skills utilization (using the skills the workforce has to enhance competitiveness and performance) is considered to have a positive association with High Performance Working and organizational performance (Stone, 2011), and management and leadership is particularly recognized as important in enabling both High Performance Working and skills utilization.

An international investigation into High Performance Working found that skills utilization tended to be “more of a concern than skills development per se” (Stone, 2011). And so, skills utilization can be described as skills being developed and then being put to effective use within an innovative workplace.

High Performance Working (HPW) practices are often used to achieve better skills utilization (UKCES, 2010b) and indicators most commonly gauge people management and working practices that actively involve and empower employees in decision making and the working environment in order to raise productivity through smarter working and engaged employees.

Employers in the Information and communication technologies sector tend to score highly in comparison to other sectors in key HPW measures linked to employee autonomy and less well where measures relate to business processes. For example, employers in the sector are more likely to identify high potential or talented individuals informally (32 per cent) than formally. Just eight per cent of employers have a formal process in place for this, compared to 14 per cent of employers across the whole economy. Public sector employers are most likely to have a formally documented process in place.

The Information and communication technologies sector has a highly skilled workforce. Qualification levels are rising, proficiency is high, and the high level of skills within the workforce reflects and aligns with the occupational structure in the workforce which is predominantly Professional and Managerial.

This highly skilled workforce enables the sector to pursue high value product market strategies and these high skills levels within the sector workforce are increasingly required in the highly competitive global marketplace in which the sector operates.

Skills levels in the sector have continued to rise alongside increases in GVA per head, with a greater proportion of employees at Level 4 and fewer at Level 2 and below. With the decrease in absolute employment in the sector from 2008, this means that there are fewer, but more

highly skilled employees than previously with increased productivity per head although total sector GVA has decreased since the onset of the recession.

Overall, the sector shows signs of valuing and utilizing the high level skills within the workforce for benefit to businesses and in driving a competitive and productive sector despite the recent recession. However, it is possible that sectoral performance is being driven by the existing level of qualification and skills in the workforce. Aside from addressing skills mismatches in the form of shortages, gaps and underemployment, if training and High Performance Working practices in particular were exploited to a greater extent, the skills of the workforce could be better managed, improved and applied to further drive sectoral performance.

Policy aspects and solutions

Staff retention gives an indication of the nature of the labor market, as movement of staff (not as a direct result of company downsizing or redundancy) could indicate: demand for skills with a more attractive working package or salary compensation elsewhere in the sector or staff dissatisfaction with the work or employment.

Across all sectors as a whole, the main reason reported by employers with retention issues for those difficulties is that not enough people are interested in doing this type of work. In contrast, of those employers in the Information and communication technologies sector with retention difficulties, the most commonly reported reason for why they find it difficult to retain employees is that the wages offered are lower than those offered by other firms. Other common reasons for retention issues reported by employers in the sector include unattractive conditions of employment (38 per cent), lack of career progression (34 per cent), not enough people interested in doing this type of work (28 per cent) and long/unsocial hours (26 per cent). Too much competition from other employers was reported by 24 per cent of employers in the sector with retention issues as a reason why retention is difficult.

In contrast to employers with retention difficulties across the economy as a whole (where the most common reaction to retention problems is not to take any measures to overcome retention difficulties), employers in the Information and communication technologies sector are most likely to offer higher pay or more incentives than normal to overcome these problems. Further training/development opportunities are also a common remedy, with 23 per cent of employers offering this in response to retention difficulties.

The majority of employers with retention difficulties feel it puts more strain on the management of existing staff in covering the shortage with 89 per cent of Information and communication technologies sector employers and 79 per cent of employers across all sectors with retention difficulties suggesting this as the impact of retention difficulties. Furthermore, more than half of all Information and communication technologies sector employers feel the impact of retention difficulties is a loss of business to competitors (52 per cent) and also restricts business development activities (51 per cent).

In the Information and communication technologies sector, 47 per cent of employers say they have (fully proficient) employees who are over qualified and over skilled – that is, the employees have both qualifications and skills that are more advanced than required for their

current job role. This is similar to the average where 49 per cent of employers say they have some employees who are over qualified or over skilled.

Whilst nearly half of employers report there is under-employment in their businesses, in terms of the proportion of the workforce that is over qualified or over skilled, this is estimated to be just 16 per cent of the workforce across all sectors. Again, the Information and communication technologies sector is around average with 15 per cent (93,637) of the workforce estimated to be 'over qualified' and 'over skilled'. The highest incidence of underemployment is in the Hospitality, Tourism and Sport sector where nearly a quarter (24 per cent) of the workforce is over qualified and over skilled.

The Information and communication technologies sector is highly skilled with 55 per cent of the workforce educated to degree level or higher. In addition, over three quarters (77 per cent) of the workforce are employed as Managers or in Professional or Associate Professional or Technical occupations. It appears from the evidence of skills utilization, overqualification and over-skilling, that the skills of the workforce are, in general, being utilized and that under-employment is not a significant issue.

Skills mismatches, whether they are skills shortages, gaps in the skills of the workforce or under-employment have a variety of consequences. In addition to adversely impacting business performance and competitiveness through increased workload for other staff, increased operating costs, quality issues, delays in new product/service development and loss of business to competitors (the main consequences of skills gaps and hard to fill vacancies), skills mismatches can also contribute to wage inflation and migration of labor.

Nearly two-thirds of employers with skills gaps say they have an impact on establishment performance – this equates to six per cent of all employers in the sector. Skills gaps and hard to fill vacancies in the sector both cause an increase in workload for other staff, and this is the most common and detrimental effect. However, the impact of skills gaps on business growth is apparent in that employers report skills gaps also increase operating costs (with 45 per cent of employers with skills gaps that have an impact on establishment performance reporting this) and delay the development of new products and services (39 per cent).

A similar proportion (five per cent) of employers in the sector report hard to fill vacancies. However, the impact of hard to fill vacancies (aside from an increased workload for other staff) is more likely than with gaps to be reported to cause delays in developing new products and services (68 per cent) and additionally, half of employers (50 per cent) with hard to fill

vacancies say they cause a loss of business or orders to competitors. Hard to fill vacancies are more likely to impact growth in the sector than across the rest of the economy where the impact of these skills mismatches is more likely to affect customer service objectives.

Although smaller in volume, hard to fill vacancies (which on the whole are skills shortage vacancies) would seem to have a greater impact on business growth indicators than skills gaps although other factors such as consumer demand and financial matters including economic stability are seen to be greater business challenges in the short term.

As employers in the Information and communication technologies sector are positive about prospects for growth in the short term (with over a third expecting their workforce to increase in size), and with forecasts suggesting substantial growth in the longer term, finding suitably skilled staff is likely to remain a challenging area for the sector particularly because of the known difficulties with attracting new entrants.

Whilst it is difficult to quantify the extent to which skills deficiencies in the sector hamper growth, in comparison to other forces, for example the impact of the recession, it would seem that employers in the sector are also prepared to 'work round' skills deficiencies through increasing wages, distributing work amongst existing staff and using migration and Intra-company transfers to meet their expectations and aspirations of growth.

Technological change is at the heart of changing skills demand in the Information and communication technologies sector. The sector itself both drives technological change and, on a wider scale, has to respond to the new innovations, products and services developed in order to deliver high quality goods and services to both business customers and consumers. Businesses across all sectors are realizing the power of technology to provide "new, innovative, more convenient, and cost-effective ways to interact with today's mobile, tech savvy customers." (Gends et al, 2011) There is a direct effect on skills within the industry and technology is also driving skills changes across the economy in the use of new technology.

'Changing values and identities' encompasses family structures and general attitudes to government, work and society. The impact on the sector of these changes includes an increasing demand for new products and services enabling different ways of working to suit changing values. For example the expansion of home based, flexible working for parents and carers; enabling work away from a traditional workplace; the use of technology to address environmental (travel) concerns and remote access to skilled labour.

The Information and communication technologies sector has already responded in the form of enabling faster and more efficient mobile and remote working, access to the 'cloud', web conferencing, collaboration software and web-based file sharing. The Horizon scanning report from SAMI calls this trend the "death of distance" (SAMI Consulting Ltd, 2010). On the other hand, the National Strategic Skills Audit for England (UKCES, 2010) notes that intensive working patterns are often in conflict with the increasing individualization of personal interests. New technologies that enable employees to work anywhere and at any time also have disadvantages as well as the benefits described above.

The impact on the sector of more remote and flexible, 24/7 working includes an increase in demand for remote technical support and in customer service skills as well as the continual development and improvement of products and services that make remote working faster, more efficient and crucially, more secure. This will particularly be the case as the rising trend of employees using their own 'devices' (i.e. Smartphone, laptop) for work purposes continues (Socitm, 2012).

Changing values also encompass the phenomenon of using the internet to communicate to the masses, and for individuals or small groups to widely publicize their cause, challenging existing laws and institutions. Recent examples of this include the role of social media in the summer riots of 2012 in English cities, through Wiki-leaks, the exposition of super injunctions through Twitter and the mobilization (and international coverage) of the Arab Spring through mobile and multi-media. Social media guidance to businesses and employees is a growing area of demand and there is also increasing pressure on the sector and individual service providers to give authorities access to individual user information, for example in relation to illegal downloading.

Attitudes to work are a key influence on skills supply to the sector. In the Information and communication technologies sector, despite increasing employer demand, job security and comparably good salaries, there has been a falling uptake of IT education and a restricted pool of talent as insufficient numbers of people, particularly women, choose to enter technical roles. Over half of employed IT/Computing graduates (56 per cent) are not working in IT occupations six months after graduating (HESCU/AGCAS, 2011). A report for BIS on STEM graduates and jobs suggests is often because of a lack of knowledge about work and careers in the sector and also "because the graduates perceive other areas (of work) to be of more interest" (Mellors-Bourne et al., 2011).

Changing consumer demand considers expectations about the type and quality of products and services produced, and consumer preferences and expectations. Whilst there has been a recent squeeze on consumer spending with increasing food and energy prices, consumer use of technology and online activity continues to increase. The range of activities spans: different and more flexible ways of working; shopping/buying and selling; entertainment including socializing listening and sharing music, reading, watching film, video and TV online and gaming; learning, communicating and being part of society, including for example through voting online, paying taxes and e-petitions.

Business skills are a main area of skills gaps in the Information and communication technologies sector. Rated in the top five largest skills gaps areas in the sector, business skills gaps include: Planning and organization skills, Problem solving skills, and written communication skills. Business skills in general are consistently reported by employers who also cite more specifically skills lacking in program, project and supplier management. In terms of skills shortage vacancies, the business skills are most lacking in planning and organization skills and problem solving skills

Solutions to develop business skills do exist but in the medium to long term there needs to be a re-adjustment of educational supply to integrate and develop business skills alongside technical skills.

The development of more effective business skills is seen as very important to the sector in terms of maximizing business benefit and efficiency from the core technical and technology skills that are required, and complementing the technical skills through a broader understanding of business objectives.

Interpersonal skills including customer service for client facing occupations whether first line or business development are seen as a potential area for skills development and future skills needs.

Whilst interpersonal skills are a skills need across most of the occupational areas in the sector, issues with interpersonal skills are more likely to be found in the traditionally technical occupations, for example in professional occupations where interpersonal skills are needed to understand customer requirements in order to provide technical solutions. In contrast, in occupations such as Sales and customer service/Helpdesk interpersonal skills have always been and are inherently core to the job requirements.

Again, whilst existing training and development solutions exist, there is a need for a readjustment of educational supply to integrate and develop interpersonal skills which will only take effect in the medium to long term.

For the sector, interpersonal skills are important to develop both business to business and business to consumer demand. It is crucial for the technical workforce to have the skills to interact with colleagues in terms of meeting customer requirements as well as the interpersonal skills required for interaction with clients.

Management skills including non-technical management skills (such as financial management and people management) and technical management skills including: Program, project and supplier management; Business process and change management; Information management and security; and Service management and delivery are seen as an important skills priority to develop.

Non-technical skills including Planning and organization skills, problem solving, written communication skills and customer handling skills are all identified as areas of skill gaps in the sector. Project management, Program and supplier management and leadership are also identified as areas needed for professionals.

Whilst business and interpersonal skills are required across occupations in the sector (and are highlighted as 'pink' skills priority across occupations), there is deemed to be a particular requirement for these skills in professional occupations. Interpersonal and business skills are more likely to have been needed by IT Strategy & Planning professionals (who are likely to be client/customer/supplier facing) than by Software Professionals but increasingly more professional occupations need interpersonal skills to understand customer requirements in order to develop and implement technical solutions. Additionally, interpersonal, business and management skills are needed to work effectively in teams.

Whilst non-technical skills needs are still considered important, in reality, these skills are further down the priority scale for employers, although for individuals working in key occupations such as IT Strategy and Planning occupations these skills will become more critical to undertake their jobs.

References

- Hwang, O Hyun, "A Quantitative Framework Of Skill Evaluation of IT Workforce" (2014). Open Access Theses. 445.
- Johnson, A., Dey, S., Nguyen, H., Groth, M., Joyce, S., Tan, L., Glozier, N., & Harvey, S. B. (2020). A review and agenda for examining how technology-driven changes at work will impact workplace mental health and employee well-being. *Australian Journal of Management*, 23.
- UKCES (2013). Technology and skills in the Digital Industries. Evidence Report 73.

COMMUNICATION SKILLS

A person's ability to properly communicate with others is seen by many people to be the most important soft skill. Having good command of communication is the ability to control, express and communicate emotions – with empathy, self-control and assertive communication –, without them becoming an obstacle to achieving objectives, is a characteristic trait in the leaders of tomorrow, and it is an essential ability that all technological businesses look for. In fact, it is not enough to have advanced technical skills, because any effort, any work is the result of a group – smooth and synergic communication are the key. Therefore, as a young person one has to put effort in developing the right communication capabilities to share thoughts, plans and above all to create empathic relationships with the rest of the team.

The lack of personal and relational assets is a current problem: “in recent years, companies frequently point out difficulties in finding graduate engineers equipped with the skills required by this new professional environment” (Direito, Pereira & De Oliveira Duarte, 2014, p. 1556). Having extensive technical skills is no longer sufficient for all technical professions. Hard skills alone as well as soft skills alone are not enough to create a complete and satisfying candidate profile. This means that hard skills must be complemented by soft skills (Patacsil & Tablatin, 2017): candidates “need not only to master the technical skills of their job but also master various soft skills, including the ability to communicate, coordinate, work under pressure, and solve problems” (Vijaya, 2013). According to the research made by Patacsil & Tablatin (2017) both “IT students and industry partners viewed soft skills equally important as technical skills for the successful integration of entry-level employees” (p. 354).

More and more, tech companies (we later mention them as IT or ICT companies) are very attentive to the creation of the right atmosphere, and technical skills are valued together with all those soft skills which are essential to make a company successful. Generally, the most required soft skills by companies for IT professionals are team working, empathy, creativity (inventing new products, adapting to unusual situations, problem solving), flexibility (adapting to situations, including unforeseen ones), interpersonal skills (inclination to dialogue, extroverted approach), responsibility and reliability, leadership (responsibility, charisma, ability to manage but also to delegate), ethics (taking the initiative, accepting criticism, being cooperative) and finally communication (ability to express oneself and to listen actively) (Lambert, 2021).

In fact, the Organisation for Economic Co-operation and Development has defined leadership, communication and teamwork skills as complementary IT soft skills, which underpin collaborative working (OECD, 2016). Hence, “for a successful activity, ICT specialist needs two categories of skills, namely: hard and soft skills. When talking about hard skills, we refer to direct technical knowledge. On the opposite, soft skills refer to communication, team work, creativity, problem solving and other personal skills. Experts agree that beside hard (technical) skills, soft (also called people-) skills are necessary” (Szilárd, Benedek & Ionel-Cioca, 2018, p. 94).

Assuming the possession of technical competences – hard skills – it is necessary to analyse how to acquire soft skills or how to refine them. “Hard skills are generally acquired through education and formal training whereas soft skills are typically developed through personal experiences” (Vijaya, 2013, 570). But actually soft skills, as well as hard skills, can be learned, improved, exercised and applied in different ways. As demonstrated by Patacsil & Tablatin (2017) a way to implement and improve skills are internship: “through the internship program, students will have the chance to apply the skills, knowledge and attitude learned in the school and at the same time the opportunity to experience the corporate environment” (p. 349).

In this sense, we have listed a few concrete examples to enhance the possibility for young people in tech to learn and reflect on their soft skills potential based on CEDEFOP and Burns (2016) analysis.

- Provide a range of measures to support young people develop their ‘work-readiness’ skills
- Improve the business environment - create common places & relax areas
- Permanent feedback mechanisms
- Invest in free time activities to undig potential
- Training in the business
- Encourage the liaison between universities and IT businesses

As companies are looking for a qualified workforce - both hard and soft skills - including soft skills in the educational process helps to bridge the gap between the university world, and more generally the school world, and the world of work. Different levels of education should give the opportunity “to young people to develop soft skills, such as entrepreneurial skills, coping skills (i.e. the capacity to deal with a problem in a creative way), learning to learn and other skills (such as the ability to work in teams, to communicate clearly and effectively, to adapt to different cultural con- texts, to solve problems, to manage conflicts, to show endurance in complicated or stressful situations, etc.)” (Succi & Canovi, 2020, 1836). Although they are still part of academic activities, internships are a good way to bridge the gap between school and the working world (Patacsil & Tablatin, 2017).

1. Development of communication skills

How many times have you heard that good communication is the key to good relations? For example, have you ever met someone and immediately decided you liked them? Then, it is important to reflect on what made communication with someone particularly attractive and smooth. Surely, how expressions and words work together is the basis for any good communication.

The broad concept of communication includes the ability to lead verbal and non-verbal communication but also the ability to establish communication networks (Vijaya, 2013). The four basic language skills are reading, writing, listening and speaking. While reading and writing are often individual actions, listening and speaking imply the involvement of other

interlocutors. Improving listening and speaking skills contributes to harmonious relationships between the different levels of communication: there are worker-to-worker communication and employee-to-employer communication but also employees-to-customers ones. The basic communication skills can be expanded with “listening, nonverbal communication, presentations, public speaking, storytelling, visual communication, and writing skills” (Prentiss, 2021, p. 346).

Communication has two dimensions, horizontal and vertical. Horizontal communication implies that the two interlocutors are on the same level, there is therefore a willingness to interact with the other interlocutor. Vertical communication, on the other hand, implies that there is only one interlocutor communicating to a passive audience. The two-dimensionality of communication therefore indicates the relational approach (Guthrie, 2021).

Communication can be defined also according to the means: face-to-face communication, non-verbal communication, active listening, writing and presentation skills, negotiation skills are part of the broad concept of communication skills. In 2019, the Office of the Chief Information Officer (OCIO) of the Government of British Columbia held a webinar entitled "Communication Skills For IT Professionals" in which communication is defined as not only verbal, but also as a combination of three factors: body language, content and voice. Body language sends implicit signals to the listener and observer. Open language indicates inclusiveness and involves involvement, while closed language indicates detachment. For example, keeping arms or legs crossed, or hands in pockets can create a detachment between the speaker and the interlocutor. Another underestimated element in communication that has a key role to play is the voice. Some studies claim that the voice constitutes 38% of communication (The Government of British Columbia, 2019). The voice can be modulated according to tone and rhythm. Increasing or decreasing the tone and rhythm can put emphasis on certain parts of the speech, allowing to give relevance and at the same time allow to reactivate the attention of the audience/interlocutor.

During both school and university courses, it is important to provide opportunities for oral practice through the presentation of projects, focus groups or student debates. At the end of educational paths youth “need to be able to step out of their comfort zone, develop cognitive skills and ultimately apply what they have learned, to work with others, and to solve problems” (Succi & Canovi, 2020, 1839).

Developing communication skills helps to convey speech according to the interlocutor in front of you. The interlocutor can be an IT expert, but also a non-expert. In order to do this, it is necessary to moderate the language according to the interlocutor. IT terminology is very technical and therefore not within the reach of every interlocutor. It should not be assumed that a person in an administrative department, for example, knows IT terminology. A technical concept can be simplified by explaining it in a more pragmatic way.

According to the authors of previously mentioned "Communication Skills For IT Professionals" (2019), the first basic element of good communication is to understand your audience. Whether it is a presentation in front of a large audience or a daily dialogue between colleagues, it is important to understand the position of the interlocutor. By getting in touch with their interests, you ensure that a listener is engaged and attentive. Clarity and simplicity of language are two other determining factors. Using clear and simple language makes it easier for the audience/interlocutor to follow and understand our ideas. IT is a technical field, full of acronyms and IT professionals are used to speaking in acronyms, but other colleagues/the public are probably not familiar with them, so it is necessary to use simple language and to define terms and acronyms when first used. As not all auditors are IT experts, comparing IT ideas and concepts with pictures or information they already know is a very useful tool.

In particular, the main communication skills that a tech young person should possess and focus on are:

- ACTIVE AND ENGAGED LISTENING
- CLEAR AND CONCISE WRITING
- CONFIDENT AND CALM SPEAKING
- ASSERTIVE COMMUNICATION

“In soft skills education, it is important to think about how one can integrate the content being communicated, the situation to which it can be applied, and the specific needs of the learner” (Vijaya, 2013, 571). Communication also means capacity to create networking and to negotiate, the aptitude for dialogue in an intercultural environment. Thus, to improve communication skills is useful to develop active listening, questioning, writing, presentation, data interchange, and information processing skills.

2. Teamwork

The current division of labour places workers within an interdependent network that can be virtual or physical. Work is no longer considered an individual and independent process, but the current work situation requires a new approach based on interdependence. We therefore speak of teamwork.

“Since so many job tasks are team-oriented these days, having the strong soft skills necessary to work within a collaborative environment is crucial” (Lambert, 2021). The tools used for teamwork are “formal (dedicated e-learning platforms, open and bought educational resources) and informal (learning through Skype, Facebook groups, different chat platforms, e-mail, the combination of these or others etc.)” (Szilárd et al., 2018, p. 97)

The work of IT professionals is mainly individual, but it may also depend on interactions with others because the working environment is often team-oriented. Teamwork therefore implies prosocial behaviour and it is also essential for developing communication skills. In this regard, the ability to work in a team contributes to productive working relationships and to the productivity of the company itself.

Within the macro area of teamwork, we can distinguish the subcategories of:

- Task and coordination: planning of tasks and subsequent coordination are necessary to clearly establish roles, considering that each part of the assembly line leads to the success or failure of the activity
- Problem solving: problem solving skills contribute to the effective resolution of conflicts in a collaborative way, recognising opportunities and assigned tasks and involving all team members. In an interconnected system, the error of an individual, as well as the success of an individual, contributes to the overall performance of the company, so it is important to analyse problems in a shared way.

Stevens and Campion (1999) define the knowledge, skills and abilities required for effective teamwork. An initial distinction is made between interpersonal knowledge and skills and self-management.

Interpersonal skills include:

- conflict resolution with integrative approaches to negotiation;

- collaborative problem solving with appropriate corrective action
- open and supportive communication combined with active listening.

Self-management skills include:

- definition of specific objectives and subsequent monitoring and evaluation and performance management
- planning and coordinating roles for individual team members and ensuring an appropriate workload balance

The concept of teamwork must be extended to online work and not just physical work. The trend towards remote working, exacerbated by the recent covid-19 pandemic, has extended the need for remote collaboration. Electronic tools can also be used to coordinate actions, share documents, information, appointments, monitor the work of others, provide feedback, hold an online video conference, and so on. Doyle A. (2020) compiled a list of useful tools for online group work: Video conferencing software, Skype, GoToMeeting, instant messaging, Google Docs, file sharing, DropBox Pro, Slack, Google Hangouts, Zoom.

To promote teamwork, it is important to disseminate the use of collaboration tools to support the team, whether working in person or remotely.

It is assumed that a group is composed of several individuals with multiple personalities so it is important to accept differences in both thinking and approach. You need to be prepared to listen actively and to confront ideas that are different from your own. Brainstorming, where everyone's ideas are put on the table to come up with a group idea, plays a key role in this respect. The contribution of each member of the group is therefore fundamental and should be considered as a resource. Good communication and exchange of ideas builds trust within the group.

It is also important to recognise achievements at group level. Sharing recognition with other members will help to strengthen the relationship within the group.

3. 'Fitting' to job vacancies

The widespread use of social networks has influenced all aspects of daily life, including job searches by both companies and workers. Very often, companies use online platforms such as

LinkedIn to search for potential employees. The online search represents a first selection of candidates, defined as “electronic recruitment” (Aguado et al, 2019). Personal pages on social networks are therefore seen as a form of business card for companies. On the other hand, workers need to be perceived as attractive by the recruiter or the company. The analysis conducted by Aguado et al. (2019) distinguishes 4 different factors that influence job recruitment: breadth of professional experience, breadth of interaction on LinkedIn or social capital, interest in updating knowledge and breadth of non-professional information. Certainly the section on education and work experience is relevant, but the extent of interaction on LinkedIn can also influence job outcomes: “LinkedIn is a professional network and the degree to which professionals develop their social capital in it can be taken as an indicator of their involvement with deepening the network built around the work they do” (Aguado et al, 2019, 61).

What do you need to do to be more marketable in the world of work? Since the labour market requires knowledge, multiple competencies and skills, ‘soft skills’ are closely connected with employability, particularly for young graduates entering the labour market” (Succi & Canovi, 2020, 1836). Rodriguez (2014) identifies the most required transversal skills as management, communication, languages, networking, team working, problem solving, underlining in that way the increased relevance of soft skills in a continuously changing environment. At the educational level, a future employee needs to develop soft skills such as leadership and practical business skills. Indeed students and young graduates need to be made aware of their individual responsibility in developing soft skills and in adopting a proactive role in order to increase their employability.

First and foremost, you need to demonstrate soft skills. To gain visibility you need to build an active and consistent presence on social media, such as LinkedIn. In fact, recruiters can browse through social pages or even judge you by simply being there.

Networking is also important. A good way to go is to become active in a professional association but also through volunteering, regardless of the actual topic. Besides being a networking tool, volunteering can be a positive way to gain new soft skills. In general, the acquisition of new skills such as new languages or certificates of various kinds can be useful (Bortz). Thus, to be more attractive on the job market, you need to work on your image. It is important to take care of the social pages of the platforms you use. Looking at LinkedIn, it is useful to build your profile according to the desired position.

According to TDK Technologies, the four basic elements of a good IT career are:

- Hard skills acquired through high quality education and continuous training.
- Soft skills such as communication skills, teamwork, and so on.
- Personal and professional goals that emphasise professional initiative
- Professional networking is also a powerful tool to develop teamwork and foster professional development

In this regard, “higher education should help students build a wider base on which they can build their future professional competences”. (Succi & Canovi, 2020, 1837). Education must therefore be adapted to the entry into the world of work, which on the other hand must guarantee the availability of jobs because education alone is not enough to guarantee the success of young people in the world of work.

The education sector and industry should cooperate with the common goal of promoting youth employment by reducing the impact of the transition from education to work.

The OECD (2021) reported two examples of youth employment. On the one hand we have IBM, a large US company, on the other hand we have Capassa AS, a Norwegian SME. The opposite size of the companies shows that the commitment should be taken consistently by the whole industry. P-Tech is an educational model proposed by IBM that involves cooperation on three levels: secondary education, vocational training and internships in industry. The ultimate goal of this educational model is to align education with the real needs of the labour market. The Norwegian case follows the same line, providing young people with guided access to the world of work through paid internships.

4. Prospects for promotion

In the past, a higher education degree was a kind of guarantee for good employment, as studies were not affordable for all families and the number of graduates was not so high. Today, however, the number of graduates is constantly increasing and the educational level of the population is much higher. This represents a challenge for the younger generation: companies can choose from a large number of candidates, generating high levels of competition among young applicants. The current labour market is therefore a very competitive challenge for young people who often accept low-level jobs, despite their long education, or accept jobs that are not in line with their education. (Succi & Canovi, 2020).

Therefore, to be competitive in the market, the ongoing training and improvement are the keywords. As technology is constantly evolving, to be competitive in the labour market, ICT professionals need to be continuously updated both in technical and non-technical aspects. In this regard, lifelong formal and non-formal professional training allows workers to be continuously updated and to be adapted to changes (European Communities, 2012). The best way to obtain new qualifications and to demonstrate the level of updating is to obtain certifications. Indeed “certification has become essential for ICT practitioners across all backgrounds. Not surprisingly, about half of them reportedly hold at least one certification” (Skills Panorama, 2019).

Intrapreneurship is a further characteristic for starting or improving a career. In this direction, youth must be aware of their position as active rather than passive players in the construction of their own futures. Intrapreneurship is of great value to IT companies, as innovation is driven by the culture of intrapreneurship, understood as the company's ability to develop a working environment that encourages creativity, innovation and entrepreneurship. The key players in the culture of intrapreneurship are the members of the company, namely the IT professionals. On the company side, it is necessary to ensure a high level of empowerment among employees because this can increase the level of job satisfaction of employees and automatically improve the company's business competitiveness: companies should be able to support “new ways of doing things, productivity and quality improvements, elimination of wasteful/inefficient work practices, new product ideas, improved product quality, new ways to save money, new procedures and new marketing ideas” (Benitez-Amado et al., 2009, p. 557) and at the same time adequately fund IT research and development. On the employee's side, it is necessary that employees have a good knowledge and training to pursue the innovation goals of the company (Benitez-Amado et al., 2009). Thus, intrapreneurship is considered a required transversal skill that includes the ability to innovate, to be proactive and to have the capacity to take risks. (Yaakub et al., 2021).

Finally, from the stakeholders' point of view, mentoring has a key role in employability and in career outcomes. According to the analysis realised by Bezionelos et al. (2016), mentoring improves job performance by enhancing both individual knowledge and skills and the understanding of the entire organisational system of the workplace, especially in the IT sector that is characterised by “constant changes in tools and skill requirements, flat structures, and

substantial worker mobility across and within organizational borders” (Bezionelos et al., 2016, p. 144).

Another aspect that fosters the market attractiveness is entrepreneurship. Entrepreneurial skills include a set of transversal competencies that are adaptable and applicable to different types of work as they are skills that apply to the attitude and mindset of the worker. The attitudinal aspects are underlined by Nisheva *et. al.* (2009): “Entrepreneurship is a set of thinking and motivation and it is difficult to be taught in a similar way as the other business or IT disciplines”. Effective communication, the ability to multitask, the use of creative thinking to develop plans and overcome obstacles, and strategic thinking are just some of the entrepreneurial skills. (Indeed Editorial Team, 2021). It can be defined as the final step in the long training process, because it requires a balance between soft and hard skills (Indeed Editorial Team, 2021), even if the academic path does not prepare ICT students to the entrepreneurship environment. Many education systems have underestimated the role of entrepreneurial skills, thus contributing to a gap between the preparation of young people and the demands of the labour market (UNCTAD, 2015). In this regard, “the lack of focused training in management and entrepreneurship was identified as missing component in ICT” (Nisheva *et. al.*, 2009). As suggested by the UNCTAD Policy Guide (2015), entrepreneurship should be an integral part of educational curricula. One example is the Know About Business (KAB): KAB is an entrepreneurship education programme developed by the International Labour Organization (ILO) that aims to introduce young people to entrepreneurship in the formal and informal education pathway (UNCTAD, 2015).

Good practices

The internship programme in general terms is considered as the ideal tool to prepare students for the school-to-work transition by bridging the gap between the acquired academic skills and the required practical expertise (Patacsil & Tablatin, 2017).

Through internship programmes, students can learn how to put academic knowledge into practice. At the same time, companies can assess the shortcomings of young people. The result of the survey conducted by Patacsil & Tablatin (2017) defines that academic curricula “should undertake to improve soft skills capability of IT students and entry level technical skills such as computer operations and maintenance” (p. 364).

In this respect, IBM has created the 'P-Tech' programme based on cooperation between secondary education, post-secondary education and industry. The aim of this project is to prepare students for work by updating school curricula according to the needs of the labour market (OECD, 2021). The aim of the different levels of education is therefore to make young workers more competitive.

The P-Tech model “combines rigorous coursework with workplace experiences that include industry mentoring, worksite visits, paid internships and first-in-line for job considerations with a school’s company partner” (IBM, n.d.).

Another example is the pilot programme launched by AXA in cooperation with four other companies. In this case, specific skills are acquired directly from the world of work. The pilot programme provides training programmes and six-month apprenticeship opportunities for 25 young people to develop the skills needed for working life (OECD, 2021).

Bibliography

Aguado, D., Andrés, J. C., García-Izquierdo, A. L. & Rodríguez, J. (2019). LinkedIn “Big Four”: Job Performance Validation in the ICT Sector. *Revista de Psicología del Trabajo y de las Organizaciones*, 35(2), 53-64

Benitez-Amado, J., Llorens-Montes F. J. & Perez-Arostegui M. N. (2010). Information technology-enabled intrapreneurship culture and firm performance. *Industrial Management & Data Systems*, 110(4), 550-566

Bortz, D. 7 surefire ways to make yourself more marketable to employers. *Monster*
<https://www.monster.com/career-advice/article/8-ways-to-make-yourself-more-marketable-hot-jobs>

Bozionelos, N. *et al* (2016). Employability and Job Performance as Links in the Relationship Between Mentoring Receipt and Career Success: A Study in SME. *Group & Organization Management*, 41(2) 135–171

Burns, M. (2016). Skills for Work, skills for life (1st edition). *I can*, 1-28.
<https://ican.org.uk/media/2145/skills-for-work-i-can-talk-8-attachment.pdf>

CEDEFOP. Developing employability skills <https://www.cedefop.europa.eu/fi/tools/vet-toolkit-tackling-early-leaving/intervention-approaches/developing-employability-skills>

Direito, I., Pereira, A. & De Oliveira Duarte A. M. (2014). The Development of Skills in the ICT Sector: Analysis of Engineering Students' Perceptions about Transversal Skills. *International Journal of Engineering Education*, 30(6B), 1556–1561

Doyel A. (2020). Information and Communications Technology (ICT) Skills. *The Balance Careers*. <https://www.thebalancecareers.com/information-and-communications-technology-skills-4580324>

European Communities (2012). E-Skills & ICT Professionalism. Fostering the ICT Profession in Europe. *European Commission, Directorate-General Enterprise and Industry*.
<https://itprofessionalism.org/app/uploads/2021/02/Brochure-Fostering-the-ICT-Profession-in-Europe.pdf>

Guthrie, G. (2021). Horizontal communication vs vertical communication. *Type talk*.
<https://www.typtalk.com/blog/horizontal-communication-vs-lateral-communication/>

IBM. (n.d.). *P-TECH*. <https://www.ibm.org/initiatives/p-tech>

Indeed Editorial Team (2021). Entrepreneurial Skills: Definition and Examples. *Indeed*.
https://www.indeed.com/career-advice/career-development/entrepreneurial-skills?utm_campaign=earnedsocial%3Acareerguide%3Asharedirectshare%3AUS&utm_conte

[nt=Entrepreneurial%20Skills%3A%20Definition%20and%20Examples&utm_medium=social&utm_source=directshare](https://www.linkedin.com/pulse/top-soft-skills-2021-jenifer-lambert/)

Labert, J. (2021). Top Soft Skills for 2021. LinkedIn. <https://www.linkedin.com/pulse/top-soft-skills-2021-jenifer-lambert/>

Nisheva, M., Gourova, E., & Antonova, A. (2009). ICT and entrepreneurship skills at FMI. In *Proc. of International Conference for Entrepreneurship, Innovation and Regional Development ICEIRD* (pp. 213-220).

OECD (2016). Skills for a Digital World. *Policy brief on the future work*, 1-4. <https://www.oecd.org/els/emp/Skills-for-a-Digital-World.pdf>

OECD (2021). Stand By Youth. How businesses can create opportunities for youth in the post-COVID world. <https://www.oecd.org/cfe/Summary-Stand-By-Youth.pdf>

Patacsil, F. K. & Tablatin, C. L. S. (2017). Exploring the importance of soft skills and hard skills as perceived by it internship students and industry: a gap analysis. *Journal of Technology and Science Education* , 7(3), 347-368

Prentiss, S. (2021). Our Basic Course and Communication Skills Training: The Time for Innovation is Now (Yes, Even in a Pandemic). *Basic Communication Course Annual*, 33(19). Available at: <https://ecommons.udayton.edu/bcca/vol33/iss1/19>

Rodriguez, N. (2014). Digital opportunities: Innovative ICT solutions for youth employment. *ITU* https://www.itu.int/en/ITU-D/Digital-Inclusion/Youth-and-Children/Documents/YouthReport_2014.pdf

Skills Panorama (2019). ICT professionals: skills opportunities and challenges. https://skillspanorama.cedefop.europa.eu/en/analytical_highlights/ict-professionals-skills-opportunities-and-challenges-2019-update

Stevens, M. J. & Campion M. A. (1999). Staffing Work Teams: Development and Validation of a Selection Test for Teamwork Settings. *Journal of Management*, 25(2), 207-228

Succi.C. & Canovi M. (2020). Soft skills to enhance graduate employability: comparing students and employers' perceptions. *Studies in Higher Education*, 45(9), 1834-1847, DOI: [10.1080/03075079.2019.1585420](https://doi.org/10.1080/03075079.2019.1585420)

Szilárd,S., Benedek, S. & Ionel-Cioca, L. (2018). Soft Skills Development Needs and Methods in Micro-Companies of ICT Sector. *Procedia - Social and Behavioral Sciences*, 238, p. 94-103

TDK Technologies. How To Advance Your IT Career <https://www.tdktech.com/tech-talks/how-to-advance-your-it-career/>

The Government of British Columbia (2019). Communication for IT Professionals <https://www2.gov.bc.ca/gov/content/governments/services-for-government/information-management-technology/information-security/professional-development/communication-for-it-professionals>

UNCATD (2015). Policy Guide on Youth Entrepreneurship. <https://unctad.org/webflyer/policy-guide-youth-entrepreneurship>

Vijaya, K. R. (2013). Teaching Soft Skills to Technical Professionals Technology versus Practical Intelligence. *International Journal of English and Education*, 2(3), 567-573

Yaakub, M. H. *et al.* (2021). Exploring the role of technology infrastructure capability and intrapreneurship to influence higher education institutions' performance. *Journal of Physics: Conference Series*, 1793.