



GREEK MARKET NEEDS IN TECH TALENT

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As humanity has entered its fourth industrial era –the one where digital technology prevails and leads the evolution of the business world- the ICT market is an area that is constantly growing worldwide and the demand for new talent to cover the available offerings is expected to grow over the next decades.

Today, more than half of the world's population is online¹. In Greece, the percentage rises to 79%². It is now a unique opportunity to ensure that the remaining population can also join the digital era – and this can only be done through technical education and cultivation of digital skills. According to ITU, almost 60% of the population lack standard digital skills and only 5% know how to write a computer program³.

In 2019, the value of the global ICT market was estimated to expand by 2.8% compared to 2018, while by 2020, the technology industry will experience new growth by 3.3%. In absolute terms, the market value stands at €3,204 trillion in 2019, while in 2020 it is estimated at €3,310 trillion. Western Europe will be the second largest market in the world - in terms of value - for the ICT industry in 2020. For Greece, the rate of change in market value expanded by 1.4% in 2019 compared to 2018 and is expected to expand by 0.2% more in 2020 compared to 2019⁴.

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1. 53.6% according to ITU (<https://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx>), 58% according to Statista (<https://www.statista.com/statistics/617136/digital-population-worldwide/>)
 2. DataReportal, Digital 2019 - Greece, <https://datareportal.com/reports/digital-2019-greece>
 3. International Telecommunication Union, ICT Development trends and approaches for Digital Transformation, <https://bit.ly/2l0c94F>
 4. European IT Observatory, IDC & SEPE ICT Market Report 2019, http://www.sepe.gr/eBook/EITO/Issue_17/index.html
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Greece holds some of the lowest positions among the EU-28 countries in the European Skills Index by CEDEFOP, especially on the Skills Matching pillar, which represents the degree of successful utilisation of skills, the extent to which skills are effectively matched in the labour market⁵. Nevertheless, future employment growth in Greece in 2018-2030 will increase by 10.2% in the ICT services sector⁶ while the country had a 22.0% share of people with above basic digital skills in 2017.



Today, more than half of the world's population is online

According to Eurostat, in 2018, ICT professionals constituted 3.9% of the total workforce across the EU's 28 state members, indicating a growth of 39.1% from 2011

to 2018, over 6 times as high as the increase (6.5 %) for total employment. Particularly in Greece, ICT specialists accounted for 1.8%⁷. The possibilities for Greek ICT professionals are immense, but the companies looking for tech talent often find it hard to match the applicants' skills to their needs. The answer to this problem is lifelong education. Although a tertiary education degree is one of the most fundamental assets for any job candidate, it is expertise and knowledge in trending technologies that the companies most ask for when looking for the ideal candidate.

In the following pages, we explore the needs of the Greek market for tech talent, in terms of hard and soft skills, professional certificates, as well as tools and programming languages that are most popular.

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5. Skills Panorama, European Skills Index, <https://skillspanorama.cedefop.europa.eu/en/indicators/european-skills-index>
 6. Skills Panorama, ICT Professional Skills, Opportunities and Challenges, <https://bit.ly/3c6aBUz>
 7. Eurostat, ICT specialists in employment, https://ec.europa.eu/eurostat/statistics-explained/index.php/ICT_specialists_in_employment
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This report is an analysis based on a national survey that was conducted in order to acquire a deeper understanding of the need for developers and ICT professionals in Greece. By gathering and analyzing the data of the survey, we recorded and mapped the particular characteristics of the developers' skills that companies seek the most. The aim of the report is to help readers get an overview of the ICT market needs in Greece in correlation with the global industry trends. Developers seeking career opportunities may be able to identify the most wanted skills and companies looking to hire talented employers will be able to better understand the dynamics of the country's ICT labor market and re-adjust their hiring strategies. Furthermore, those employed in the educational and professional training sectors can also identify trends that will help them shape new programs and opportunities.

The survey was conducted between August and October 2019 among 75 companies in Greece that employ or plan to employ ICT professionals in the near future. The majority of the companies stated that they operate on the ICT field, while other sectors include finance/banking, education, manufacturing, marketing/communication and gaming, among others.

The survey included a combination of closed-ended and rating scale questions, with a total of 20 questions asked. Respondents spanned various managerial levels and organizational departments, but mostly held decision-making or managerial positions.

**In Greece,
ICT specialists account
for 1.8% of the workforce**





SocialInnov is a non-profit endeavour with a mission to eliminate the digital skills gap and large unemployment rates in Greece, by educating individuals and connecting technological talent with the private sector. We are committed to building the best learning experience inside and out and to enable young or underprivileged groups fulfil their social and professional potential.

In 2020, Socialinnov launched Tech Academy (techacademy.gr), a new digital skills training program supported by Microsoft Philanthropies' Learning and Certification Pilot Program. Focusing on underserved youth populations, and particularly the unemployed and women, Tech Academy aims at bringing new technological talent to the market by identifying the needs of employers, training beneficiaries in modern ICT technologies, providing opportunities to acquire professional Microsoft certificates and connecting the certified individuals to employers in the private sector. Tech Academy will provide free online training courses and free access to Microsoft certification exams over 3-month cycles.

www.socialinnov.gr

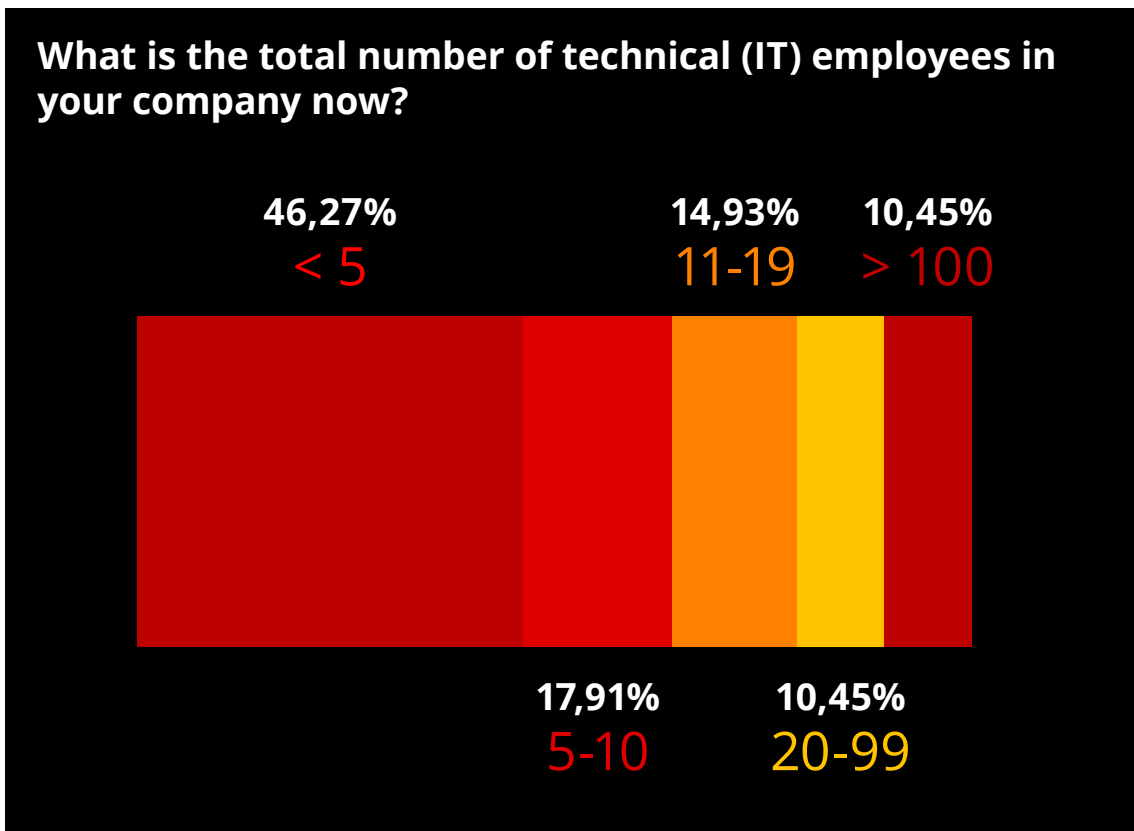
**Tech Academy
aims at bringing
new technological talent
to the market**





Our survey sample consisted mostly of small and medium sized companies (64.18% of them currently employ 1-10 IT employees), although a rather high percentage (10.45%) have more than 100 IT employees. 61.19% stated that they plan to hire at least one technical employee in the following year, and 11.94% of companies are willing to hire more than 20, which is quite encouraging. As expected, the companies with the largest amount of current employees are the ones that plan to hire the largest amount of technical workers in the future as well, and they mainly operate in the ICT and Banking sectors, according to our survey demographics.

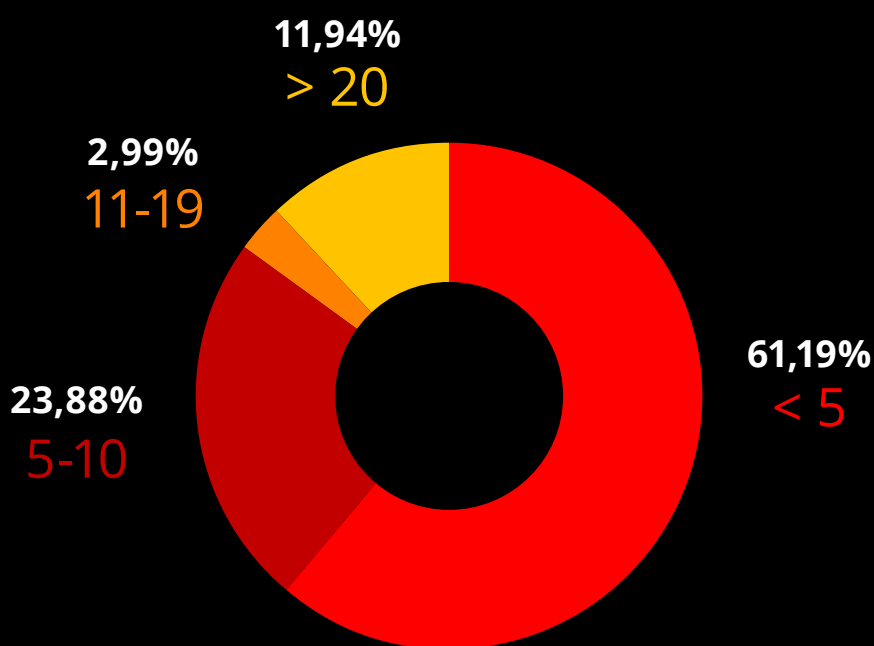
**In Greece,
the overwhelming
majority of developers
are currently
employed by SMEs**





It is worth noting that in Greece, the overwhelming majority of developers are currently employed by SMEs. Specifically, almost a third of participants (28.7%) are employed by companies with fewer than 5 employees, with a total of 54.5% working for companies with up to 19 employees. 18.56% work in companies with 20-99 employees and the remaining 26.9% are employed by companies with more than 100 employees⁸.

What is the number of technical employees that you are planning to hire in the following 1 year?



8. TechTalent, Developers in Greece Survey (October 2018), <https://blog.techtalent.jobs/developers-in-greece-survey-2018/>



a DIGITAL TOOLS

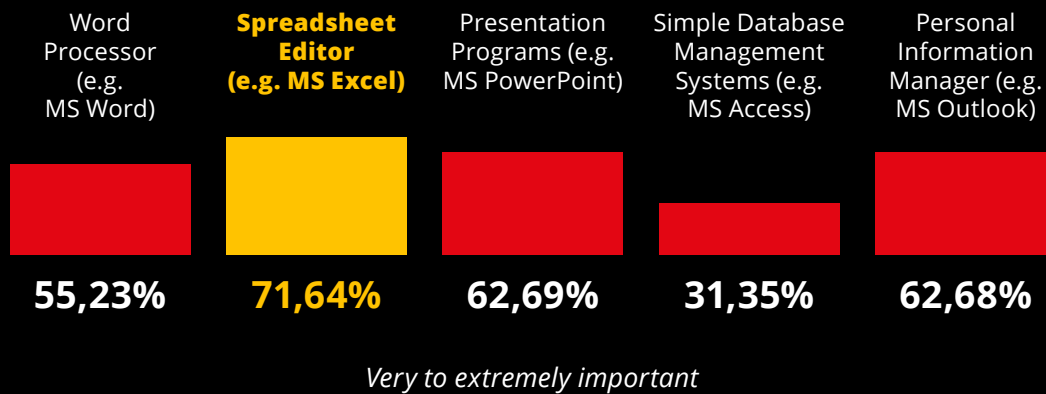
It is always very interesting to see what companies consider the most valuable technologies and tools for their daily operations. Office productivity suites are undoubtedly among the most used tools on a global level, across all market sectors and verticals. The companies we surveyed **consider as extremely important the knowledge of a spreadsheet editor (i.e. Microsoft Excel) and an email and communication tool such as Microsoft Outlook.** The use of word processors and presentation software follows, while simple database management tools (such as Microsoft Access) are less popular choices.

When asked about the knowledge of some digital tools, the companies surveyed showed a clear demand for good knowledge of Programming and Databases, followed by Productivity and Collaboration tools and Project Management tools. It is worth noting that Programming and Databases are considered more important than IT infrastructure and Digital Marketing / Communications even among companies operating in the ICT sector, proving that demand for software programming is still very high.

The companies surveyed showed a clear demand for good knowledge of Programming and Databases

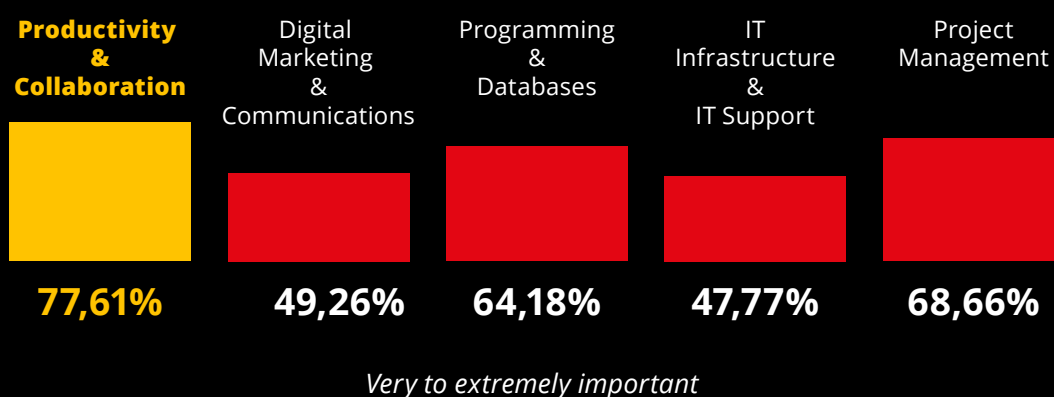


How important is good knowledge of these Office tools to your company?



Nevertheless, one should also note that **Productivity and Collaboration tools are also considered very important.** When taking into account that companies consider team spirit and adaptability as the two most important soft skills, it is obvious that employers consider of paramount importance the way people interact with each other in the office environment and the impact it has on the company's productivity and efficiency. Luckily, more than 70% of Greek developers report being familiar with Collaboration (72.7%) and Project Management (71%) tools⁹.

How important is good knowledge of these digital tools and skills to your company?



9. TechTalent, Developers in Greece Survey (October 2018), <https://blog.techtalent.jobs/developers-in-greece-survey-2018/>

b

PROGRAMMING LANGUAGES, TOOLS & FRAMEWORKS



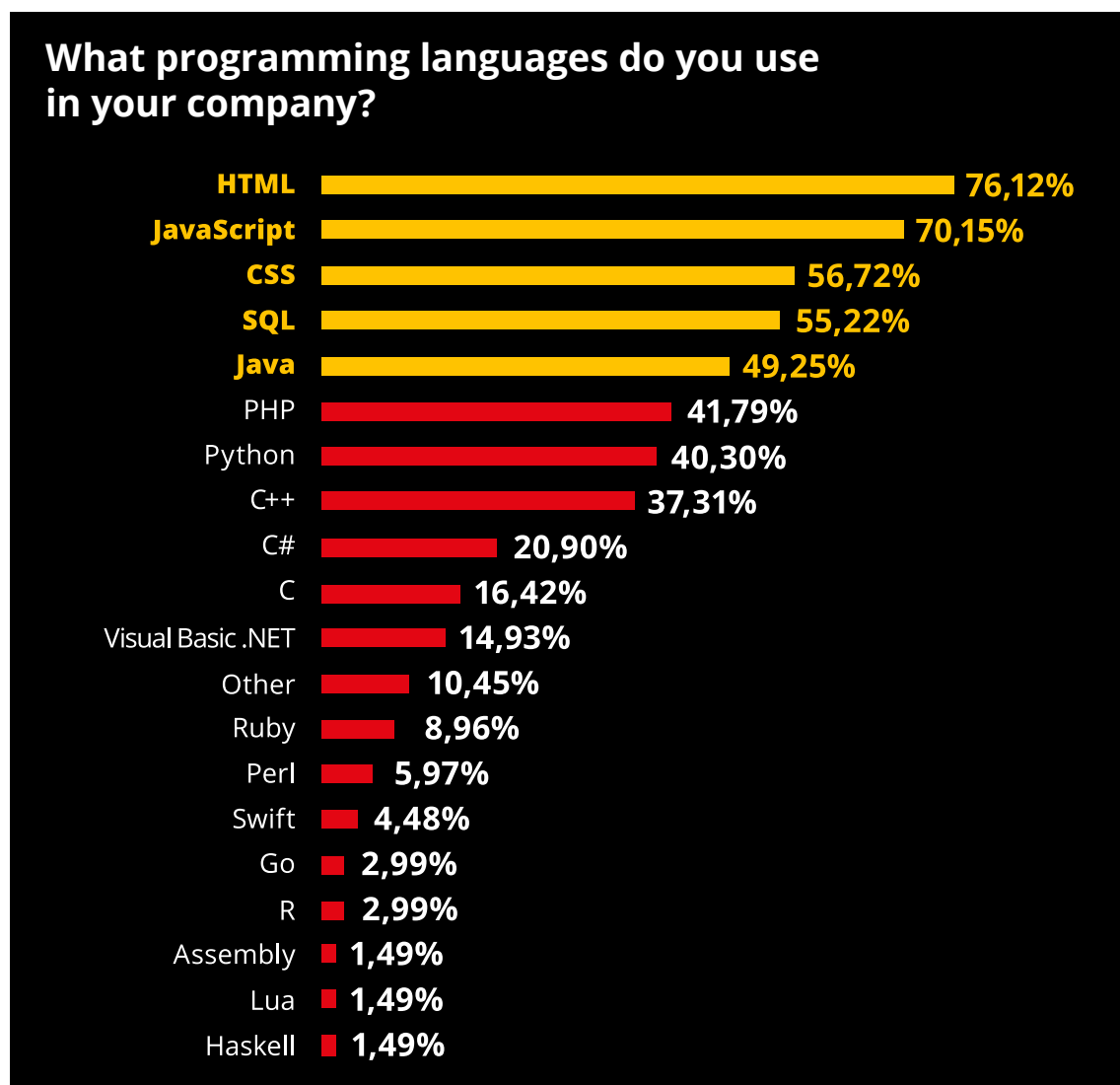
**HTML ranks first,
closely followed
by JavaScript
and SQL**

In regards to the programming languages that the companies surveyed use the most, HTML ranks first, closely followed by JavaScript and SQL. Global reports usually place JavaScript in the first position, which is also the case here when responses are filtered to reflect only the needs of companies operating in the ICT sector. Luckily, the most popular skill amongst Greek developers is indeed HTML, as 73.3% of them report holding at least a basic knowledge level. JavaScript comes second with 64.6%, followed by MySQL and CSS at 52.7% and 52.5%, respectively, and Java at 50.4%¹⁰.

Greek ICT companies rank programming languages in a slightly different order: JavaScript, HTML, Java, CSS, PHP, proving that Greece follows the global trends of high demand in web development languages, both back and front-end.

10. TechTalent, Developers in Greece Survey (October 2018), <https://blog.techtalent.jobs/developers-in-greece-survey-2018/>

Java and Python also rank among the top 10 programming languages, with the latter seeing a rise over the recent years as big data, advanced analytics and machine learning are growing in importance. JavaScript, Java, Python and C++ are the best-known programming languages globally according to a survey by CodinGame¹¹. Another source, SlashData, features JavaScript, Python, Java and C# as the top 4¹².

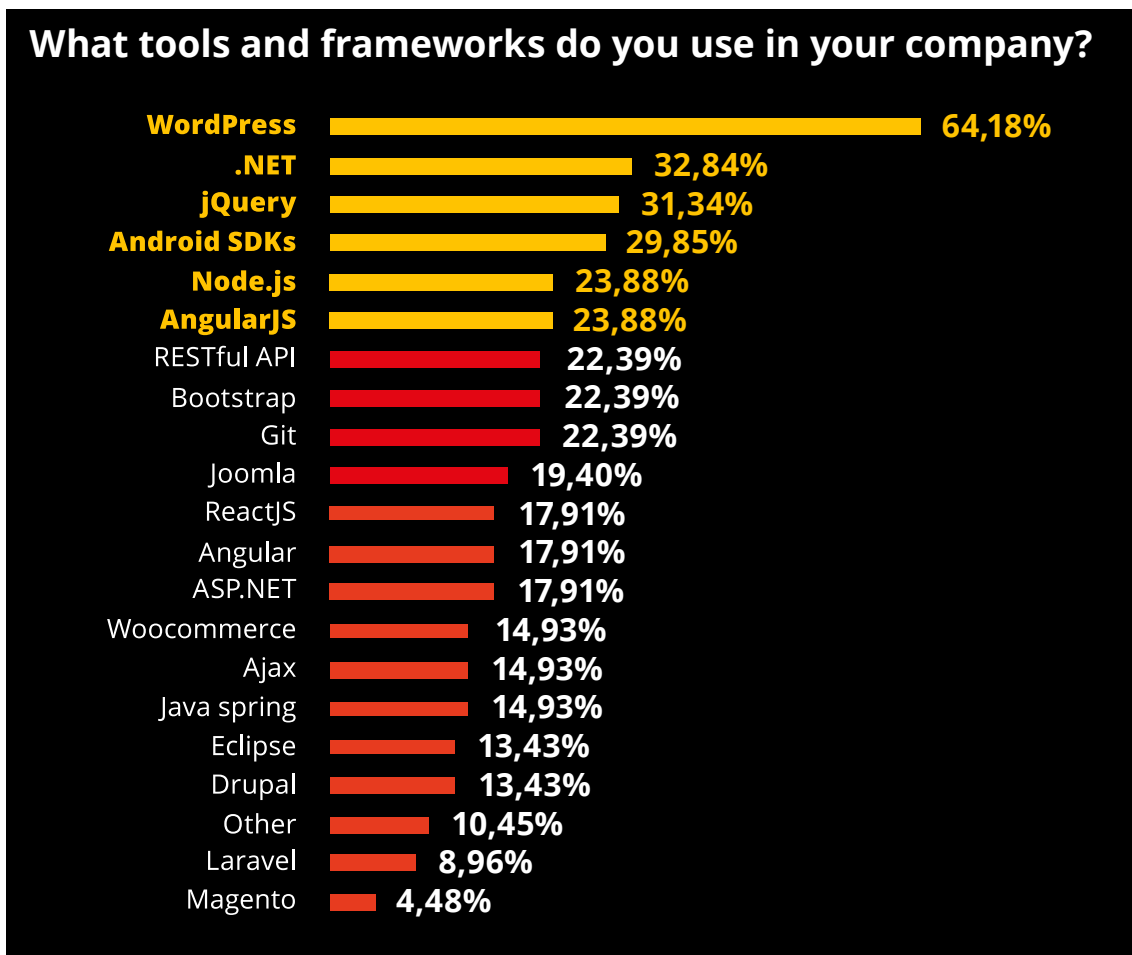


11. CodinGame 2020 Developer Survey Report, <https://www.codingame.com/work/codingame-developer-survey-2020/>

12. SlashData, Developer Economics | State of the Developer Nation Q2 2019, <https://bit.ly/39YPwJK>

In terms of tools and frameworks, the companies we surveyed show a **clear preference in WordPress**, a fact that shows how strong the demand for a web presence is. A Microsoft technology, .NET, also ranks high, as it offers both front and back-end possibilities.

Another thing worth noting is that Android SDKs are also among the top five tools, proving both the popularity of Google’s mobile operating system among consumers, as well as a clear focus of development that puts the mobile user in priority (“mobile-first” philosophy). According to TechTalent’s report, 44.4% of developers in Greece report to at least hold a basic knowledge level at Wordpress and 31% at .NET respectively¹³.



13. TechTalent, Developers in Greece Survey (October 2018), <https://blog.techtalent.jobs/developers-in-greece-survey-2018/>

C CERTIFICATES

It is now often being said that skills are more important than degrees. While Greek companies usually ask for a certification when posting job vacancies, they don't seem to ask too much of candidates. Demand for a Bachelor's degree is high (as expected), but demand is lower for a Master's degree or a Doctorate. On the other hand, a professional certificate is considered more important than a PhD. Professional certificates can be acquired in shorter terms and usually cost less than a high level university diploma, while they also provide candidates with skills more relevant to the market, targeted to specific market needs and thus enabling them to follow better career opportunities.

According to CodinGame's report, the majority of developers globally have gone on to achieve a higher level of education: 54.8% of them hold either a Master's or a Bachelor's degree, while 2% have a PhD. However, 21.7% of developers say they don't have any formal qualifications¹⁴. According to Eurostat, in 2018, more than two thirds (63.1%) of ICT specialists in the EU had a tertiary level of education. The share of ICT specialists with a tertiary level of educational attainment increased during the most recent decade for which data are available, by 8.2 percentage points between 2008 and 2018. Almost 70% (69.1%) of ICT specialists in Greece are reported to have tertiary education, rising from 51.9% in 2008¹⁵.



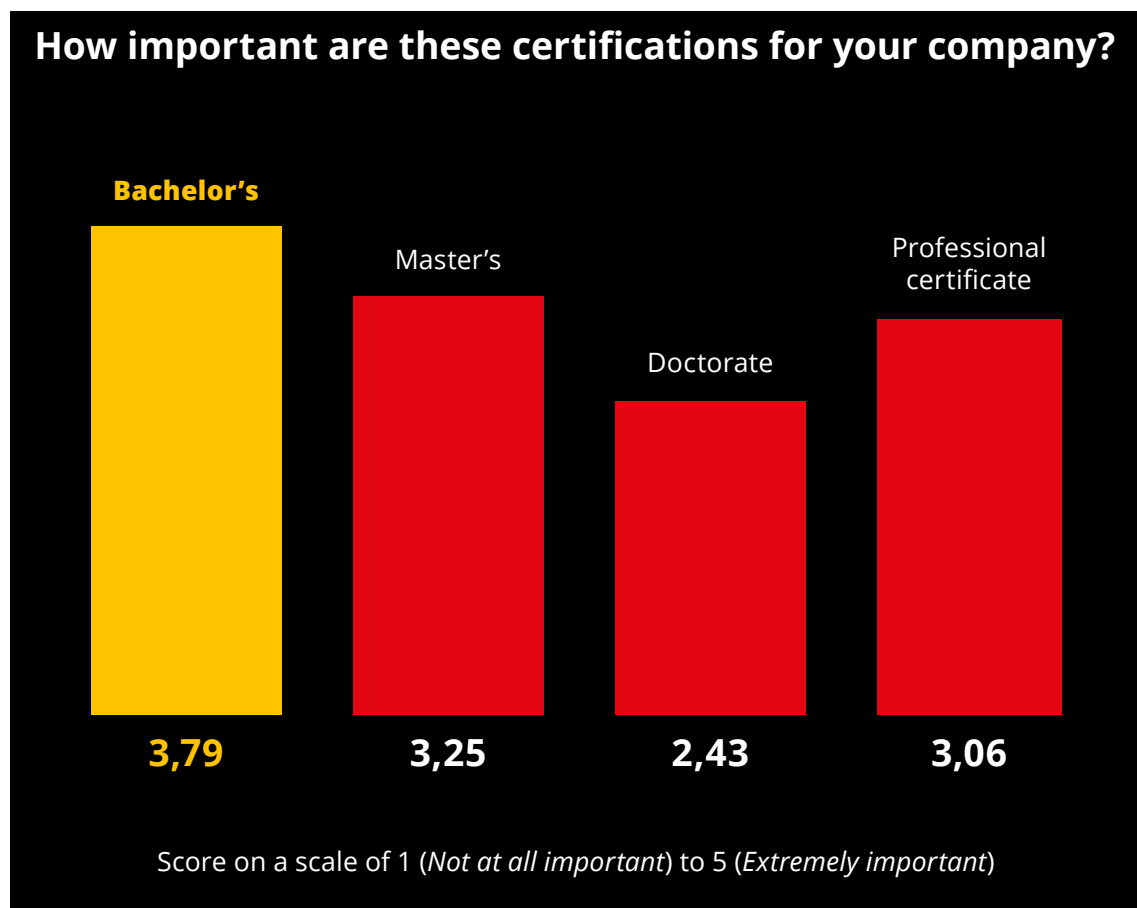
A professional certificate is considered more important than a PhD

14. CodinGame 2020 Developer Survey Report, <https://www.codingame.com/work/codingame-developer-survey-2020/>

15. Eurostat, ICT specialists in employment, https://ec.europa.eu/eurostat/statistics-explained/index.php/ICT_specialists_in_employment

TechTalent's survey also backs this claim, as around 90% of developers in Greece report to having received further education or professional training following graduation from a secondary education. 1 in 4 developers has attained a postgraduate degree, with 24.3% completing a Master's and 1% a Doctorate's degree¹⁶. All these indicate **an array of skilled individuals in the Greek market who are looking for opportunities to further educate themselves.**

According to Cedefop, 74% of ICT professionals are expected to have a high level qualification in 2030. Those with medium level qualifications are expected to account for 25% of the workforce in 2030¹⁷.



16. TechTalent, Developers in Greece Survey (October 2018), <https://blog.techtalent.jobs/developers-in-greece-survey-2018/>

17. Skills Panorama | Cedefop, ICT professionals: Skills Opportunities and Challenges (2019 update), <https://bit.ly/2T7Vgdh>

Demand for Soft Skills



Soft skills have grown in importance in the latest years, as employers realize it is equally important to have a team of people working effectively and seamlessly together. Thus, it comes as no surprise that **'Team spirit' comes up first, followed by the ability to be agile and adaptable as the most valued and desirable soft skills**. Reliability and the 'Passion to improve' are considered more important than Communication skills and Creativity. The latter is somewhat contrasting to the global trends that stress that creativity should be among the top skills of the future, one that would help humans surviving in the era of automation and machine intelligence.

Many of these soft skills can be cultivated and enhanced through reskilling and educational programs



According to Eurofound's Job Monitor, being creative is considered one of the most important intellectual tasks of ICT professionals¹⁸. When filtered, the responses of ICT companies in our survey are closer to the global trends, as they rank Creativity/Innovation as third, right after Team Spirit and Reliability.

It should be stressed that many of these soft skills can be cultivated and enhanced through reskilling and educational programs. Companies looking for candidates with such skills should also focus on providing the right conditions for their development in their own workforce.



18. Eurostat, ICT specialists in employment, https://ec.europa.eu/eurostat/statistics-explained/index.php/ICT_specialists_in_employment



Almost 60% of the companies surveyed in Greece find it difficult to very difficult to attract technical candidates with the desired digital skills that match their needs. It should also be noted that IT ranks as the 4th most in-demand profession in Greece, while technicians and engineers occupy the first two positions¹⁹.

But what are those needs and -most interestingly- what will they be for the next 3 years?

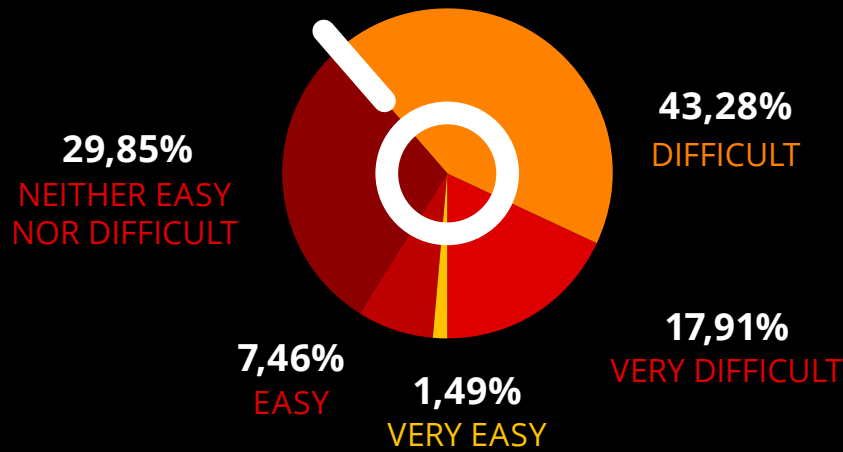
Almost 70% of the companies surveyed consider very to extremely important the need for Application/Web Development, while Data & Analytics follows, as well as other technologies like Business Intelligence, Databases and Cloud & Infrastructure.



Companies are mostly on the look for mid to senior level technical employees (up to 8 years of experience)

19. ManpowerGroup, Talent Shortage survey 2019, <https://go.manpowergroup.com/talent-shortage>

How difficult is it for your company to find technical (IT) candidates with digital skills that match your needs?



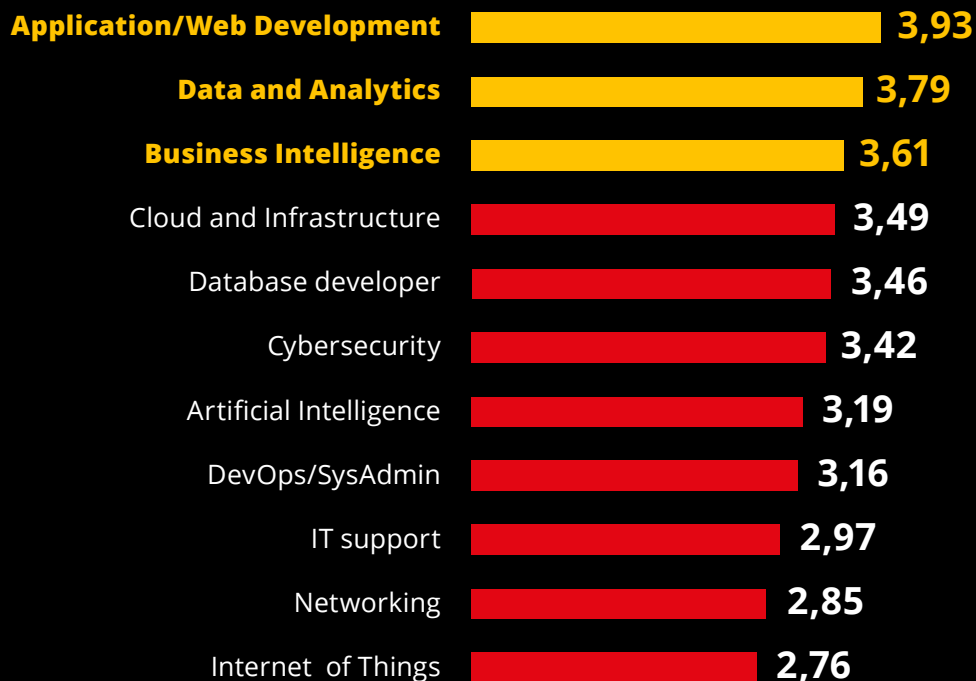
The top position is quite expected, as companies are in constant need of maintaining a good online presence or even e-commerce applications, especially through mobile channels. We emphasize on mobile, as 8 out of 10 persons (83.4%) having accessed the Internet during the 1st quarter of 2019 in Greece accessed it away from home and work, using a mobile device, recording an increase of 9%, compared with the data of the 1st quarter of 2018, when relevant share was 76.5%²⁰.

The increased demand in BI and Data Analytics is closely associated with Digital Transformation efforts. While this fact is indeed encouraging, it strikes as odd that some other technologies often associated with Digital Transformation rank lower, such as Cybersecurity and IoT. The majority of Greek companies state that they have already started projects that fall under the Digital Transformation scope (more than 90%), and yet they point to the need for new skillsets as the great barrier in those efforts, according to a report by Found.ation and EIT Digital²¹.

20. Hellenic Statistical Authority, Survey on the Use of Information and Communications Technologies by Households and Individuals, <https://bit.ly/36yiMVD>

21. Found.ation & EIT Digital, Digital Transformation in Greece 2019, http://thefoundation.gr/digital_transformation_report/

What are the most important technical needs for your company in the following 3 years?



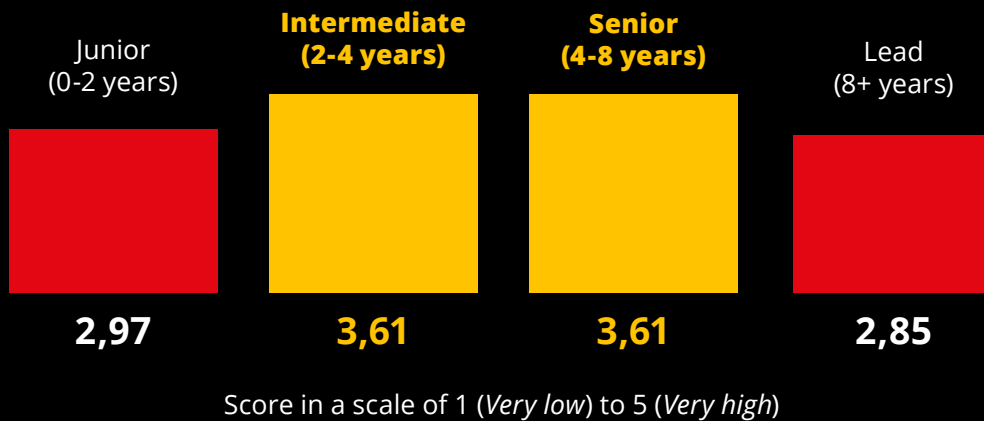
Score in a scale of 1 (*Not important at all*) to 5 (*Extremely important*)

Companies are mostly on the look for mid to senior level technical employees (up to 8 years of experience), while there is also plenty of room for junior developers to grow within the organizations.

Lead developers are less sought after, which is very reasonable, as the lead positions within companies are limited. What is important to stress is that this particular need of companies for mid-senior developers outgrows the number of developers available in the Greek market²².

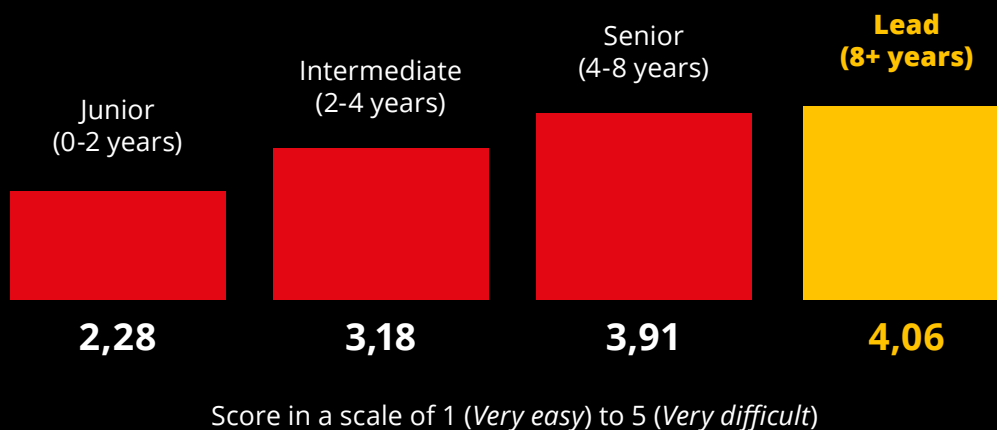
22. TechTalent's report shows that 45.5% of developers in Greece reported being at Junior level in terms of experience, whereas the remaining percentage was almost evenly split among Intermediate level (18.7%), Senior (17.4%) and Lead (19.3%) [Developers in Greece Survey, <https://blog.techtalet.jobs/developers-in-greece-survey-2018/>].

What are your company's needs in these levels of IT professional experience?



This is exactly why they can and should turn to junior developers in order to train them and help them develop according to their own needs. Another thing to note is that it's hard for senior developers to become leads in the Greek market, as not many companies have a big number of developers so they can have the chance to gain that experience locally. Leads with good experience have moved abroad in a large part, or are placed in the few companies that can afford them. As expected, junior developers are easier to find, although not always with the needed skills (hard or soft).

How difficult is it for your company to find IT professionals with the following levels of experience?



When hiring new ICT employees, the greatest challenges that companies face is to find a candidate who matches the job requirements or who is the right fit for their team. The latter is one more proof that team spirit is ranking high as the company culture gains in importance in the recent years and the managers recognize its value and impact. As for the first challenge, one could argue that this might be an issue with over-ambitious or unrealistic job descriptions. At present, only 18.5% of Greek companies stated that their employees fully or mostly meet their digital skills requirements, states a white paper by IDC, sponsored by Microsoft²³.

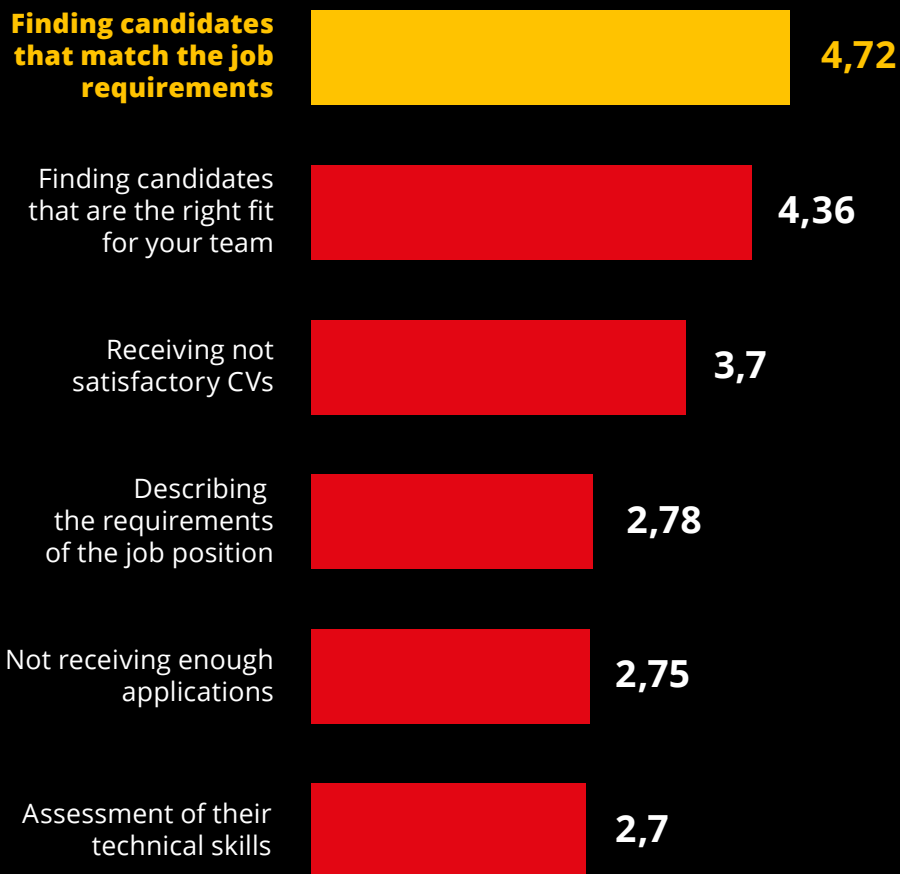


When hiring new ICT employees, the greatest challenges that companies face is to find a candidate who matches the job requirements or who is the right fit for their team

23. IDC EMEA, The State of Digital Skills in CEE: Greece (August 2019), <https://bit.ly/2T62nTG>

The difficulties companies face in recruiting the right talent are reflected on the increased time and resources they spend on their recruiting efforts. According to a 2019 report from iCIMS, a recruitment software provider, it took companies an average of 55 days to fill a tech role in 2016, but that jumped to 66 days in 2019²⁴.

Please rank the challenges your company faces when hiring new technical (IT) employees.



Score in a scale of 1-6

24. iCIMS, 2019 Benchmark on Hiring Tech Talent, <https://cdn31.icims.com/icims3/prod/pdf/misc/2019-Benchmark-on-Hiring-Tech-Talent.pdf>



The ICT sector will continue to evolve on a worldwide scale as its role is taking an increasingly central position for both our society and our economy. The human capital in ICT can be a driving force for innovation within enterprises and our society in general.

There is a vibrant community of developers in Greece, with members spread across all experience levels, possessing diverse skills and coming from different educational and socioeconomic backgrounds. Yet, the demand for talent in the ICT industry tends to exceed the supply.

As a growing number of technical workers are joining the ICT labor market at junior levels, employers should explore the possibility to create learning opportunities for them within their organizations.



The demand for talent in the ICT industry tends to exceed the supply

This increasing number of new and skilled developers can act as a catalyst for attracting new investments in software development and other related industries and could be the driving force for many corporate Digital Transformation initiatives that aim at increasing competitiveness, effectiveness and agility.

People with ICT related studies should also seek to stay updated in rapidly evolving fields such as Mobile, Data Science, Internet of Things (IoT) and Embedded Devices.

Vocational education and training, and -especially-flexible, online or self-paced courses could play a major role in preparing people for the changing demands of the 4th Industrial Revolution.

Innovating and modernising education and training are key priorities in several flagship initiatives of the 'Europe 2020' strategy – and should also be in all European national strategies. At a governmental level, more should be done to encourage lifelong learning, and to create initiatives that aim at inspiring females, especially young girls, to show more interest in the male dominated ICT field. It is worth noting that, in Greece, only 10.9% of ICT specialists are female (EU average is 17.2%)²⁵.

Demand for soft skills is increasing as automation becomes more widespread. Skills like communication, creativity, and team collaboration are becoming more important as key factors that differentiate human workers from robots and are thus increasingly important for enterprises.



25. European Commission, Women in Digital Scoreboard 2019, <https://ec.europa.eu/digital-single-market/en/women-digital-scoreboard>



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