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**Grand Coalition
for Digital Jobs**

WP4 - Certification

DELIVERABLE 4.3 - Present national and European-level uptake of e-CF powered tool **Country report: THE NETHERLANDS**

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1 Introduction to the Deliverable and Scope

The outputs described in this deliverable outline the uptake of the European e-Competence Framework (e-CF) powered tool at national and European level. This deliverable is part of Work package (WP) 4 – Certification. The main objective of WP4 – Certification is to strengthen the ICT professionalism, by promoting the e-CF in Europe.

This deliverable relates to task 4.3 which aims to:

- Accelerate the adoption of the e-CF through the CEPIS e-Competence Benchmark Tool,
- Allow ICT professionals/aspiring professionalism to identify the competences they need/lack for various ICT roles (using the e-CF) enabling them to adapt to market demand and communicate competences across borders,
- Work with partners to generate an update of the e-CF at national and EU level,
- Raise awareness of the e-CF,
- Promote and share the resulting data on usage to demonstrate the value of the e-CF.

This deliverable will be widely disseminated once approved among national and European stakeholders to show the real-world, practical application of the e-CF in action. It shows how ICT practitioners can identify the competences they need/lack for various ICT roles, enabling them to adapt to market labour demand and communicate their competences in a comparable manner across the EU.

2 Context

The increasing demand for ICT practitioners is hampered not only by the lack of new entrants into the profession, but also by the mismatches in the competences that practitioners have today. While ICT provides crisis-resistant employment, Europe currently is not producing the talent with the right skills to boost competitiveness. The ICT professional bodies and informatics societies that are the members of CEPIS recognise the need to reduce the gap between supply and demand and commit to taking action to redress the balance and promote ICT professionalism.

Under the Grand Coalition for Digital Jobs, the European Commission has launched a series of practical initiatives to help fill the growing number of vacant ICT-related jobs across Europe, and to ensure that more people get the training needed to work in the digital economy. To support the roll-out of the Grand Coalition for Digital Jobs, DIGITALEUROPE has collaborated with partners such as ECDL Foundation, CEPIS and others to establish the Secretariat of the Grand Coalition. This deliverable is part of the WP4 within the strategy of the Secretariat of the Grand Coalition.

The purpose of this deliverable is to present the national and European-level uptake of an e-CF powered tool, which is a free, online interactive tool for current and future ICT professionals to identify the competences they need for various ICT roles, enabling them to adapt to labour market demand. It will enable individuals and recruiters to map their competences against a range of profiles and better equip themselves for future roles and employment. It will allow companies to benchmark entire departments, identify workforce gaps and plan accordingly.

It is powered by the European e-Competence Framework the common language for ICT competences created by the CEN workshop on ICT skills and therefore provides a standard upon which Europeans can better understand what is needed for their current and future IT roles based on the ICT Professional Profiles developed by CEN.

Several national reports have been produced for each participating country which aggregate the information for that country and produce a snapshot of the ICT professional landscape. This report will provide information to support policy making, as well as update information for the training industry on market needs.

The European level report brings together all of the data from throughout Europe and provide a basis for policy recommendations on future actions to support the ongoing development of the ICT profession.

3 Executive Summary

This report provides the Dutch results of a European initiative designed to identify the digital competences held by ICT professionals across 31 countries in Europe and beyond. This report is based on the CEPIS e-Competence Benchmark an online, interactive tool that enables individuals and organisations to assess their competences against the European e-Competence Framework (e-CF)¹. Using the results of the CEPIS e-Competence Benchmark, this report offers a unique view of the status of professional e-competence in Europe and shows the practical application and real-world usage of the e-CF.

As experts predict that the demand for skilled ICT professionals will far outstrip supply, it is more important than ever to provide current and future professionals with the ability to compare their competences against those needed for typical ICT job profiles throughout Europe. This helps identify training and professional development opportunities to transition to new roles and even to start an ICT career. This work was carried out as part of the Grand Coalition for Digital Jobs, an EU-wide initiative to address the competence mismatches and fill vacancies of ICT practitioners to boost employment.

The results gathered through this pan-European initiative provide an insight into the level of professional competences and a snapshot of the types of ICT professions in each country. It also is a means to implement the e-CF, demonstrating to individuals and organisations how it can be of immediate and practical benefit. The ability to determine which competencies are underdeveloped on a national and European scale can assist policy makers as well as training providers with timely information for decision making. This, in turn, can facilitate the development of focused training courses to further educate the workforce so as to meet the needs of the labour market.

The research has been conducted via an interactive, free, web-based tool that is powered solely by the European e-Competence Framework ([e-CF](#)) and the accompanying professional profiles. The e-CF has been developed by the CEN (European Committee for Standardization) Workshop on ICT Skills and is supported by the European Commission. This framework identifies 36 ICT competences which are all used in this tool along with the professional job profiles developed by CEN.

This project has been led by the Council of European Professional Informatics Societies (CEPIS) and implemented in conjunction with CEPIS members. Special thanks to the [Vereniging van Registerinformatici \(Vri sig NGi/NGN\)](#) who led the project in the Netherlands and provided expert perspectives on the national ICT landscape.

¹ For more information about the European e-Competence Framework see: <http://www.ecompetences.eu/>

4 Methodology

This initiative has been conducted in 31 countries in Europe and beyond using an interactive, web-based tool: the [CEPIS e-Competence Benchmark](#). The European results are compiled based on over 2,000 responses provided by participants from these countries.

It is important to note that the results presented here reflect the constituency of those who participated in the CEPIS e-Competence Benchmark. In some countries that may have implications for the general statistical significance of the data. The CEPIS e-Competence Benchmark has been completed by individual respondents who consider themselves to be ICT practitioners, or who will soon become one, and is divided into three sections as described below. It is fully compatible with and is based on the e-CF and associated professional profiles.

4.1 Personal Information

In the online tool, each respondent is invited to register and then enter personal information including education background, employment status, organisation size, and industry. They then select the ICT profile that matches their current role from the following 23 professional profiles, grouped into 6 families:²

BUSINESS MANAGEMENT	Chief Information Officer Business Information Manager ICT Operations Manager
SUPPORT	Account Manager ICT Trainer ICT Security Specialist ICT Consultant
SERVICE & OPERATIONS	Database Administrator Systems Administrator Network Specialist Technical Specialist Service Desk Agent ³
DESIGN	Business Analyst Systems Analyst Enterprise Architect Systems Architect
DEVELOPMENT	Developer Digital Media Specialist Test Specialist
TECHNICAL MANAGEMENT	Quality Assurance Manager ICT Security Manager Project Manager Service Manager

Figure 1 ICT Professional Profiles

4.2 Competence Questionnaire

In this section of the assessment, the respondent completes the competence questionnaire, which consists of 36 competences. The questionnaire is divided in five areas of competences - Plan, Build, Run, Enable, Manage - that are derived from ICT business processes.

For each competence, the level options available are: None, Knowledge, Experience, or Knowledge and Experience. Upon selecting 'Experience' the respondent is asked to indicate their corresponding level of experience. Additional information, such as

² For more information on the professional profiles : <http://ftp.cen.eu/CEN/Sectors/List/ICT/CWAs/CWA%2016458.pdf>

³ The profile of *Service Desk Agent* is excluded from the present analysis as the profile was sufficiently broad to encompass most respondents, thus skewing the results.

examples of the knowledge and skills associated with that competence, is also available to assist the respondent in choosing an appropriate level.

B-Build	None	Knowledge	Experience	Knowledge & Experience
B.1. Design and Development Designs and engineers software and/or hardware components to meet required specifications, including energy efficiency issues. Follows a systematic methodology to analyse and build the required components and interfaces. Performs unit and system testing to ensure requirements are met.	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Please select all currently relevant experience levels (select one or more as required)				
Level 2 Systematically develops small components.	Level 3 Acts creatively to develop and integrate components into a larger product.	Level 4 Handles complexity by developing standard procedures and architectures in support of cohesive product development.	Level 5 Has ultimate responsibility for strategic direction of product, technical architecture or technology development.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
OK				
B.2. Systems Integration Installs additional hardware, software or sub system components into an existing or proposed system. Complies with established processes and procedures (e.g. configuration management), taking into account the specification, capacity and compatibility of existing and new modules to ensure integrity and interoperability. Verifies system performance and	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Figure 2 Example of Competence Level and Experience Level

4.3 Competence Questionnaire

Upon completion of the questionnaire, the respondent is presented with personal results. These results are displayed on a graphical radar, split into 36 segments (one for each competence) as illustrated in [Figure 3](#). The graphic will show which of the 23 ICT professional profiles best matches the respondent's e-competences, regardless of the profile the respondent selected.

The results are represented in a proximity index which gives an indication of how the respondent's competences match the requirements of the specific job profile (see [Figure 4](#)). A high proximity index indicates that the respondent has the necessary competences for this role.

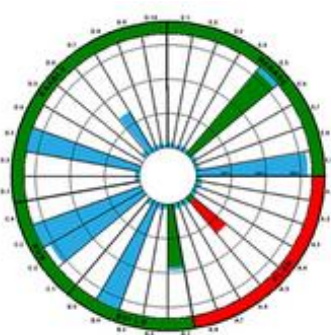


Figure 3 Personal Results: the 'Radar'

View report	Your proximity to this profile	View e-CF profile
 SYSTEMS ANALYST	84.75 %	
 ICT TRAINER	76.47 %	
 TECHNICAL SPECIALIST	59.09 %	
 DIGITAL MEDIA SPECIALIST	51.43 %	

Figure 4 Personal Results: Proximity Index

Moreover, the results also indicate the competences that the individual should seek to improve, as well as the competences that exceed the level required for the given profile.

Each respondent can review their proximity to any other professional profile to assess their potential to move into a new role, and export the results into a report that may be printed.

4.4 Proximity Profiles

The Proximity Profile is used to identify and classify respondents into homogeneous groups in terms of specific skills (professional profile).

The CEPIS e-Competence Benchmark uses the 23 professional profiles as defined by the CEN Workshop on ICT skills. Each profile is characterised by a specific set of competences (ranging from two to five competences) selected from the 36 competences identified and described in the e-CF.

An algorithm produces a score, based on the knowledge and experience reported, for each of the 23 profiles. These scores are then compared with what is required for each profile and expressed as a percentage match. The highest score shows the profile(s) that is closest to the expertise of the respondent. This is referred to as the Proximity Profile. The level of proximity is shown as a percentage: a 100% proximity index means that the competence declared by the respondent completely satisfies the requirements for that profile.

4.5 Competence Proficiency Index

The Competence Proficiency Index (CPI) is used to measure the degree to which the competencies identified by the e-CF framework are represented in Europe today.

On the basis of the respondents' declaration of competence, a Competence Proficiency Index is computed for each of the 36 competence identified in the e-CF. This index, expressed as a percentage, represents the degree of proficiency for each competence with respect to the e-CF. So, a 100% Competence Proficiency Index means that the respondent declared to have relevant experience at each one of proposed levels of competence.

The analysis of the Competence Proficiency Index of each competence can be useful to design detailed training paths to cover the competence gaps.

4.6 Criteria for Inclusion and Country Level Analysis

In order to ensure the integrity of the results, certain criteria for inclusion of the results were established at the level of the individual response as well as at the country level.

The criteria for individual responses were established so as to exclude responses that are incomplete, or completed in a manner that is implausible. Implausible

responses include those that for example have the highest level of knowledge and experience in all competences. Responses that do not comply with the established criteria have been excluded from the results.

The data validation ensures that only results meeting the following criteria are included:

- knowledge of 5 or more competences,
- experience in no more than 31 competences,
- Proximity Profile score(s) of at least 40%,
- ex-aequo⁴ top score in 5 profiles or less.

With the high number of participating countries, it was necessary to decide upon the baseline criteria to ensure that the volume and the quality of responses were suitable for country level analysis. The following criteria were adopted to ensure the integrity of the country reports:

- a competence profile is included when 10 or more valid questionnaires are completed. In other words a cluster of 10 respondents enables a professional profile to be analysed for that country,
- a country profile can be generated where there are more than 50 valid assessments completed, and at least one competence profile has 10 or more valid assessments.

4.7 The European Benchmark

All country results are compared to the European benchmark, sometimes also referred to as European average. In order to avoid distortions due to a higher number of contributions from certain countries, the European benchmark has been computed as a weighted mean, taking into account an equal number of contributions from those countries which, although in varying degrees, have proved to be the major contributors.

⁴ Assessments which show the same proximity score for more than one profile are counted as many times as the same score appears.

5 Respondent Demographics

The research was launched across 31 countries in Europe and beyond. Over 2,000 current and future ICT practitioners participated in the research.

This chapter provides an overview of the demographics of Dutch respondents. Thanks to the Vereniging van Registerinformatici (Vri sig NGi/NGN) 52 respondents were assessed using the CEPIS e-Competence Benchmark, which resulted in one professional profile qualifying for analysis.

5.1 Respondents by Age

The Dutch respondents represented a range of age groups as highlighted in [Figure 5](#)⁵. The average age of respondents in the Netherlands is around 50 years and that makes them the oldest ICT professionals among the countries surveyed as they are eight years older than the European average.

As shown in [Figure 5](#), the percentage of the over 50 years segment is very high, close to 60% of all respondents, while all the other segments are lower than the European average. This may be based on the constituency of the research, in many countries those who are affiliated with the professional body are more senior professionals.

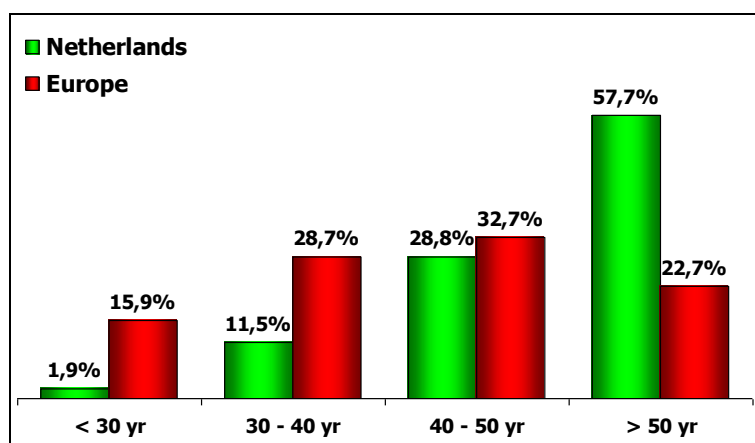


Figure 5 Respondents Distribution by Age

5.2 Respondents by Gender

The gender results show that there is still a large degree gender imbalance in ICT; in fact, the comparative analysis in [Figure 6](#) shows that the Netherlands is lagging behind even the low European average in the sample. Women in the Netherlands represent only 10% of ICT professionals, while the European average is a meagre

⁵ Note: as '<20 yr' and '>60 yr' classes count for a low % of total assessments (respectively <1% and about 5%), they have been grouped into the adjacent class. As a result, only four age classes are shown: '<30 yr', '31-40 yr', '41-40 yr', and '>50 yr'.

15%. Among all countries taking part in the research and eligible for analysis, Netherlands (along with Belgium and Spain) shows the lowest rate of female presence in the sample. National experts confirm that female representation is typically quite low. Awareness of the need to address this gender imbalance is increasing.

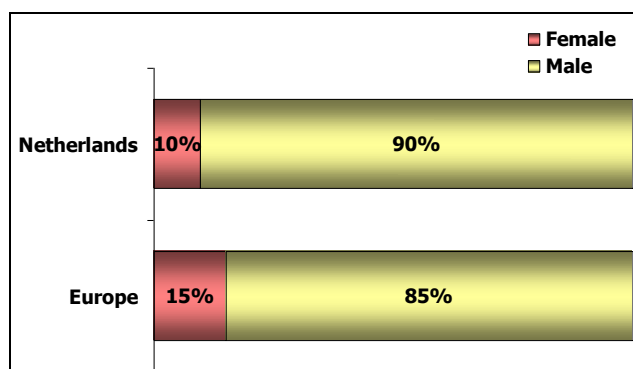


Figure 6 Respondents Distribution by Gender

5.3 Respondents by Education Level

The respondents were asked to select the highest level of education that they had achieved. The majority of the respondents in the Netherlands (96%) have at least a degree level qualification. Moreover, results of this sample also show that the Dutch rate of 96% is the highest rate among the European countries, which average at 86%. Moreover, 50% of Dutch ICT professionals obtained a fourth level qualification (master's degree or PhD), which is the highest rate as well; it is 10% higher than the average rate in Europe. National experts point to the requirements for the accredited 'RI' status as an explanation for this. RI status requires BA or higher education levels.

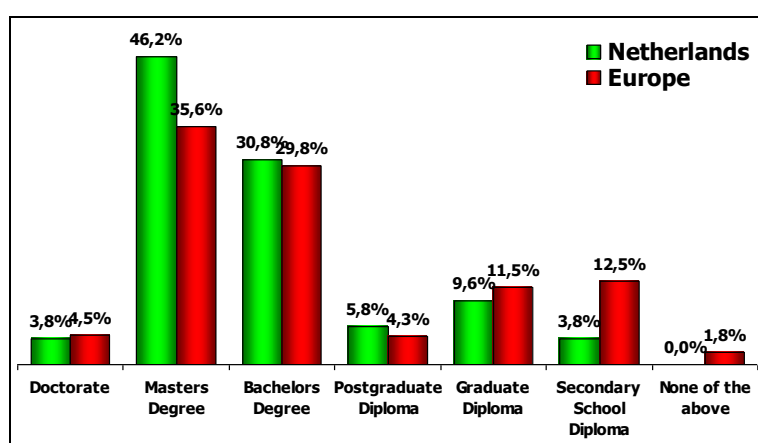


Figure 7 Respondents Distribution by Education Level

5.4 Respondents by Educational Field

The wide range of educational backgrounds of ICT practitioners points to the fact that the ICT profession is both attractive and accessible to graduates from different faculties. However, in this sample 60% of respondents have an IT-focused background. This means, that 40% of Dutch professionals have an education in

which IT was only a side subject or not significant in their studies. That is more than the European average of 34%.

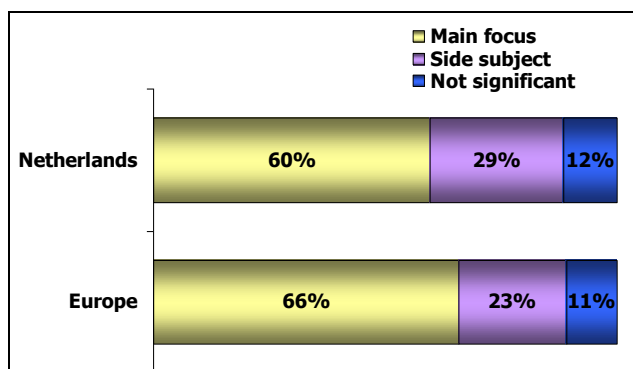


Figure 8 Respondents Distribution by Educational Field

5.5 Respondents by Industry Sector

About half of the Dutch respondents come from the IT demand side, as is the case across the whole of Europe: the average is 48% for respondents focused on IT demand side activities.

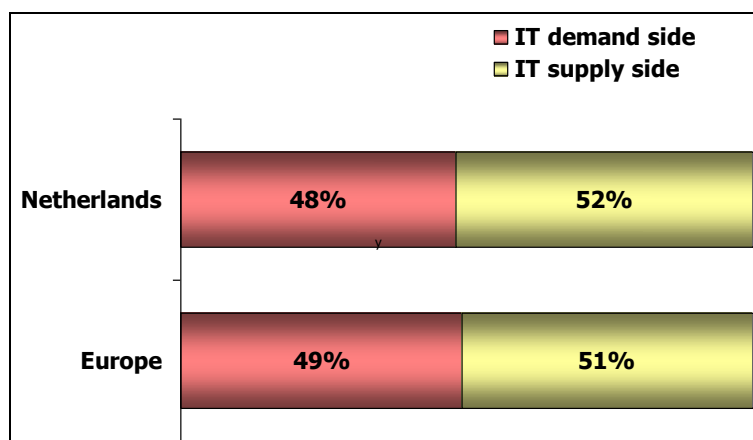


Figure 9 Respondents Distribution by Industry Sector

5.6 Respondents by Enterprise Size

The distribution of respondents by organization size shows a shift towards bigger enterprises. The rate of respondents which are working in micro or small enterprises is 20% in the sample while 42% work in larger companies. The European average shows a slightly different situation: 24% of respondents work in micro/small enterprises and 36% work in large organisations with more than 1,000 employees.

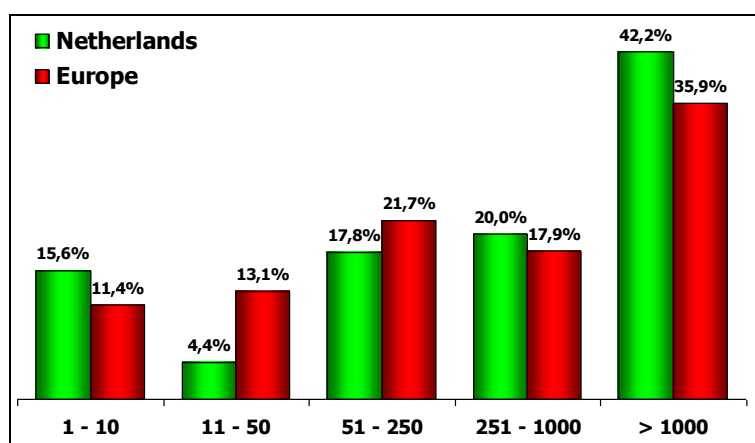


Figure 10 Respondents Distribution by Enterprise Size

5.7 Respondents by Professional Status

The majority of Dutch respondents hold full-time positions⁶ (69%, the second lowest rate among surveyed countries), which is lower than the European average, as shown in [Figure 11](#). Moreover, almost one out of four (23%) Dutch ICT professionals are self-employed, which is about three times as high as the European average (8%) and therefore the highest rate among European countries.

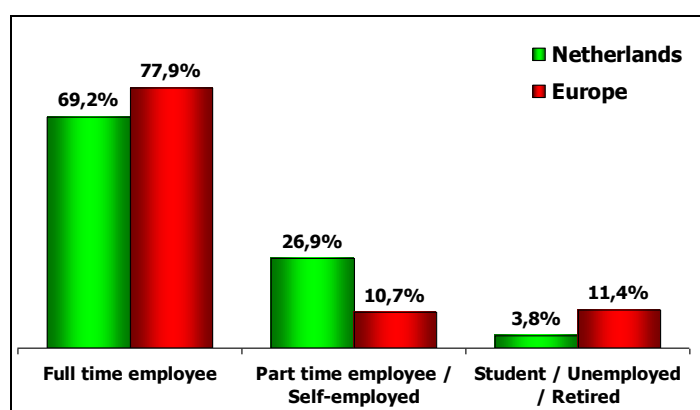


Figure 11 Respondents Distribution by Professional Status

5.8 Respondents by Declared ICT Profile

[Figure 12](#) shows the distribution of ICT profiles chosen by the respondents during registration (before starting the assessment). This subjective point of view is based on their experience and the actual role they hold. It differs from the Proximity Profile as explained in chapter 1.4.

Among 23 ICT profiles, only 12 profiles were selected to a certain extent. Moreover, seven of these profiles were chosen by only a few people which means that only six

⁶ Note: as 'Full time employee' choice counts 80% of total assessments, the other items were grouped as follow: 'Part time employee / Self-employed' and 'Student / Unemployed / Retired'.

profiles were chosen by more than 10% of the respondents: Business Information Manager, Enterprise Architect, and ICT Consultant (11.5% each), ICT Operation Manager (13.5%), and Project Manager (15.4%).

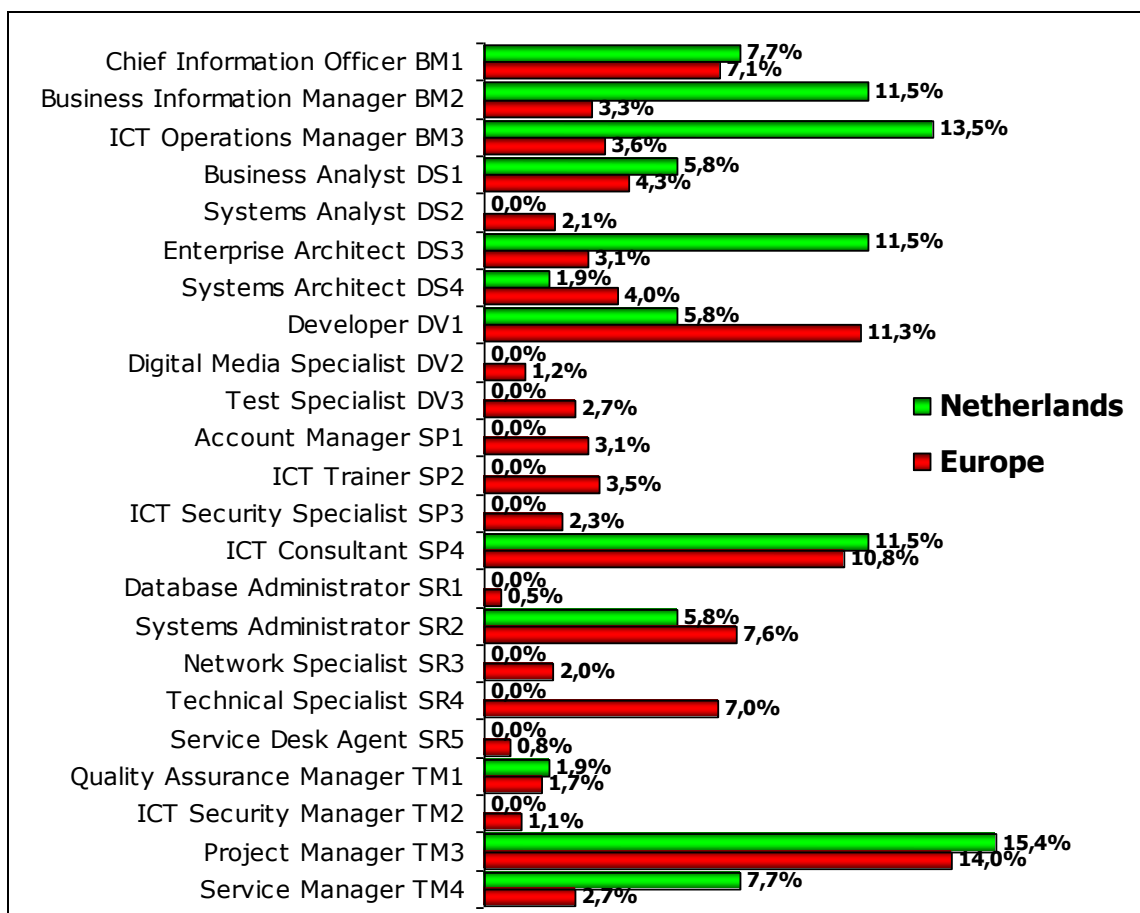


Figure 12 Respondents Distribution by ICT Profile

6 Proximity Profiles and Competences

6.1 Respondents by Proximity Profile

Based on the outcome of the calculated Proximity Profiles, we can see a picture emerge of ICT profiles from the competences declared by the Dutch respondents.

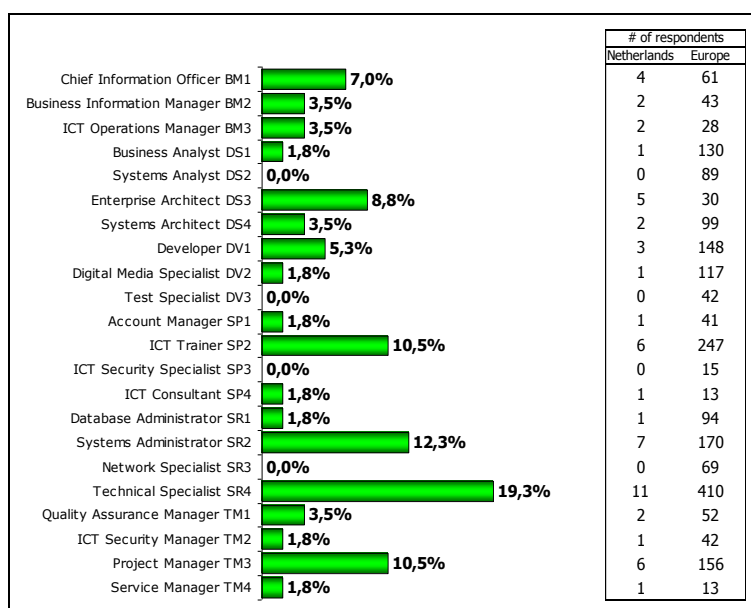


Figure 13 Respondents Distribution by Proximity Profile

6.2 Comparison between Professional Profile and Proximity Profile

The analysis of the profile selected by ICT practitioners and the Proximity Profile, i.e. the profile that fits best with the competences that were declared, shows a large variance for the only eligible profile in the Netherlands in this sample.

As can be seen from [Figure 14](#), no one declared to be a Technical Specialist, but an analysis of the respondent's competences leads to 21% of all practitioners having the necessary competences for that role. This trend, although with a slightly smaller gap, is replicated across Europe, as seen in [Figure 14](#), where only 7% of European respondents declared to be Technical Specialist, but 24% of practitioners in the sample had the required competences for this role.

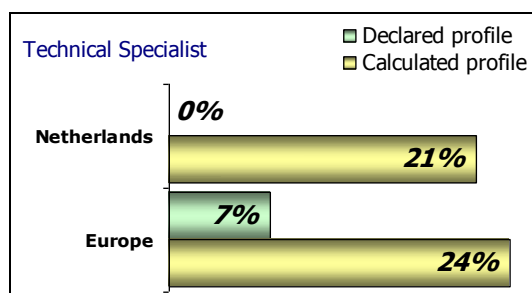


Figure 14 Technical Specialist: Declared and Calculated Profile

In general, the difference between the declared and the calculated professional profile highlights the importance of the level of competence granularity for each profile. The Proximity Profiles are created only on the basis of the competences (and their proficiency levels) as self-assessed by respondents, and combined with an appropriate algorithm that calculates the Proximity Profile. In contrast, the declared profiles are simply selected by the respondent according to the job title they hold. The declared profiles can differ greatly from the calculated profile as a result.

This is why the declared profiles can differ greatly from the calculated profile. Only 27% of the declared profiles of Dutch respondents match the calculated profile (23% is the European average).

For this reason, only the data from the calculated profiles is used for analysis: the calculated profile is a more precise profile.

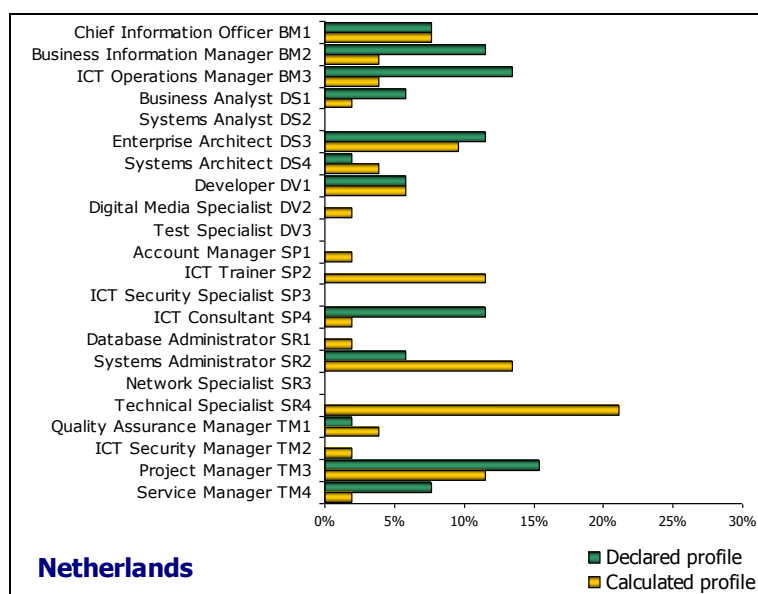


Figure 15 Comparison of Declared Profile and Proximity Profile

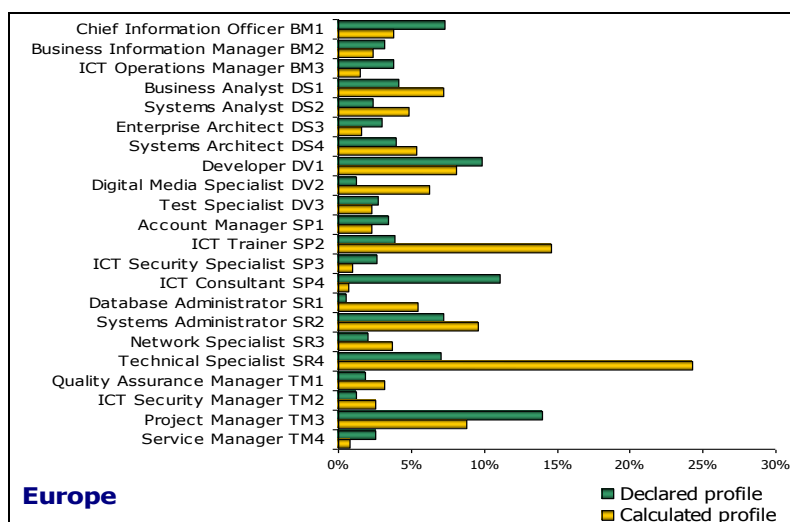


Figure 16 Comparison of Declared Profile and Proximity Profile

6.3 Analysis of Competence Proficiency Index

Figure 17 provides a comparison of the Dutch and European averages of the Competence Proficiency Index (CPI) for the five competence areas: Plan, Build, Run, Enable, and Manage.

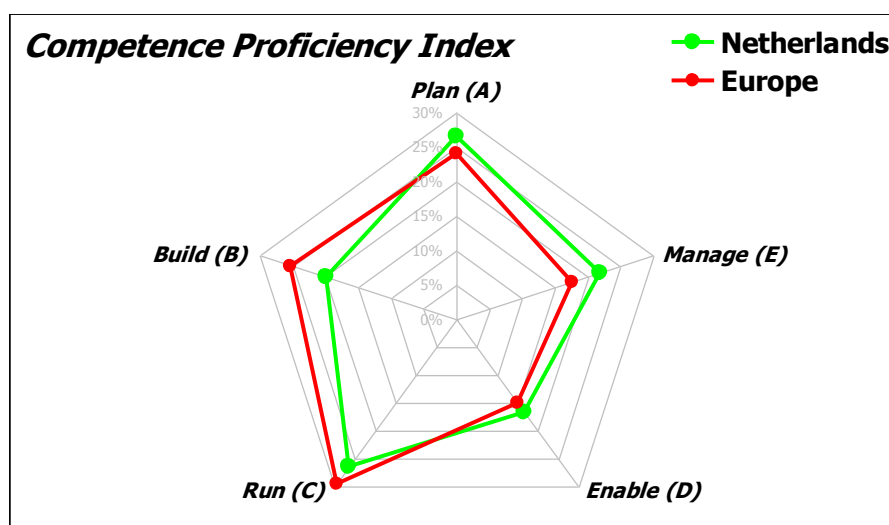


Figure 17 Competence Proficiency Index by Competence Areas

In the Netherlands, it appears that the Competence Proficiency Index is lower in this sample than the equivalent for Europe in the Build area (20% vs. 24%) and in the Run area (26% vs. 29%), but higher in the other areas. The full value of each CPI is 100%. More relevant differences, compared with the European average, appear to in the Build area (20% vs. 24%), in the Manage area (22% vs. 18%), and in the Run area (26% vs. 29%).

However, it appears that the Enable area is the weakest, both for the Netherlands and Europe.

A deeper analysis of the Competence Proficiency Indexes of each competence area is fundamental in order to design detailed training paths to cover the competence gaps for each Proximity Profile of each respondent.

The following chart ([Figure 18](#)) shows the average CPI for all Dutch respondents.

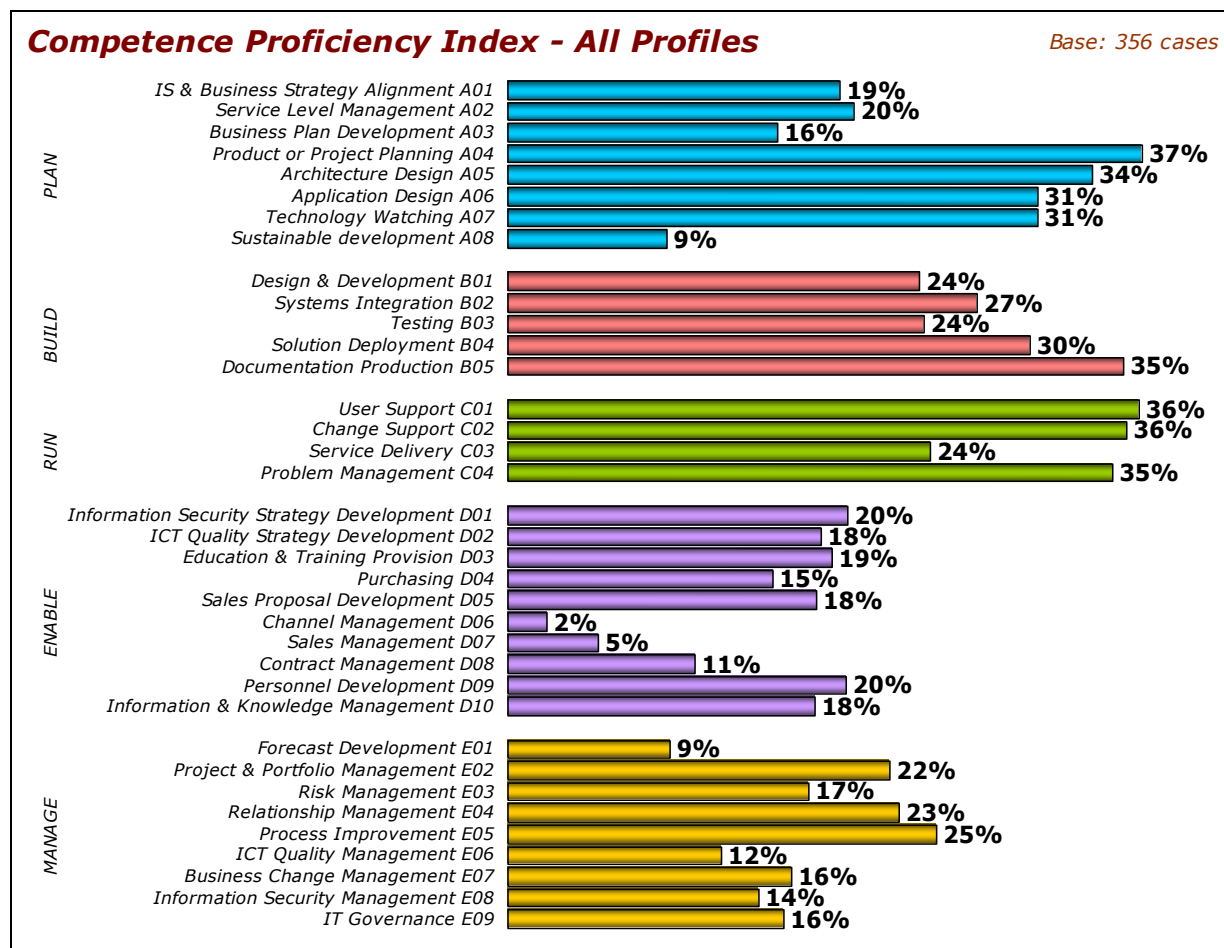


Figure 18 Competence Proficiency Index

7 Profiles Analysis

The answers collected generated 57 Proximity Profiles in relation to 22 ICT professional profiles ([Figure 13](#)). The eligibility criteria for the analysis of these profiles were the following:

- 10 or more cases per country for each profile,
- a Proximity Profile score higher than 40%.

Following these criteria, only the Technical Specialist profile was selected and analysed

7.1 Technical Specialist

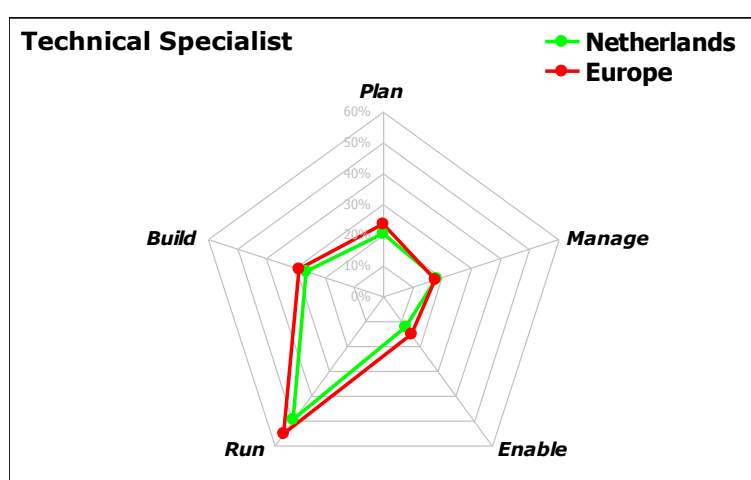


Figure 19 Competence Proficiency Index – Technical Specialist

All Dutch Technical Specialists in the sample have obtained a university degree or higher, which is clearly higher than the 79% of all Technical Specialists in Europe, but quite close to the Dutch general average of 96%. Moreover, 45% of Dutch Technical Specialists have obtained a fourth level qualification (master's degree or PhD), which is almost double as high as the European average of 26%, but still a bit lower than the Dutch average for all ICT professionals (50%). In the Netherlands, 55% of Technical Specialists have an IT-focused background. This rate is lower than the 68% average of their European colleagues and also compared to the 60% of all Dutch respondents.

The Technical Specialist is quite mature. In fact, the average Dutch Technical Specialist is 47 years old, about 5 years older than their European colleagues (42 years old) but about 3 years younger than the average of all Dutch ICT professionals (50 years old).

All responding Technical Specialists were male which means a higher percentage than the proportion of respondents in this sample both as compared to Europe (89%) and to the Dutch average (90%).

Dutch Technical Specialists show a Competence Proficiency Index pattern by area which is worse than the European average in four areas. For the Manage area, the Dutch and European CPI are equal (18%) but slightly lower in the Plan area (20% vs. 23%), the Build area (26% vs. 29%), and with wider differences in the Enable area (12% vs. 16%), and the Run area (50% vs. 55%).

Regarding the Competence Proficiency Index, Dutch Technical Specialists gain their best results in the competences of the Run area: Change Support (62%), Problem Management (48%), and Service Delivery (48%). Some slightly negative differences compared to the European average arise in Project & Portfolio Management (-13%), Relationship Management (-13%), Solution Deployment (-12%), and Education & Training Provision (-11%). The best performances compared to the European average are in Information Security Management (+15%), ICT Quality Management (+10%), ICT Quality Strategy Development (+10%), and Technology Watching (+9%).

8 Conclusions

The data gathered in this round of the CEPIS e-Competence Benchmark research shows a high degree of interest from professionals in reflecting on their own competences and shows how the e-CF provides an effective basis for this. However, from a statistical point of view, the results need to be tackled with care, as the sample of voluntary respondents who accepted the invitation from the computer society could prove to be biased and not fully representative of the total community of local ICT professionals in the Netherlands.

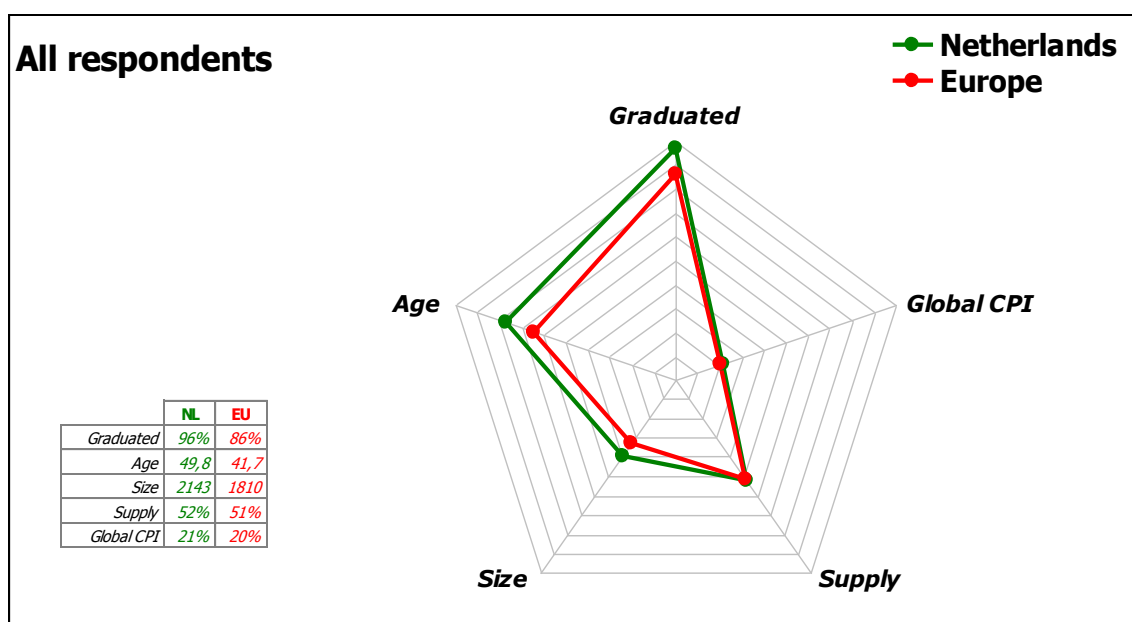


Figure 20 The Dutch Respondents Profile

The average profile of the Dutch respondent ([Figure 20](#)) differs from the European average profile essentially by being older and with a larger proportion of graduated.

The analysis of profile segmentation per profile and by age (see section 6.1.1) shows that the general average age is around 50 years in the Netherlands, while the European average age is 42 years. Dutch ICT professionals are the oldest among European countries. As in other countries, for the Netherlands there is a need to attract younger people to the ICT profession without losing the experience of the older age group. Data show low rates of ICT professionals under 30 in the sample (2% globally). [Figure 21](#) below shows the distribution for each profile of Dutch ICT professionals by age range.

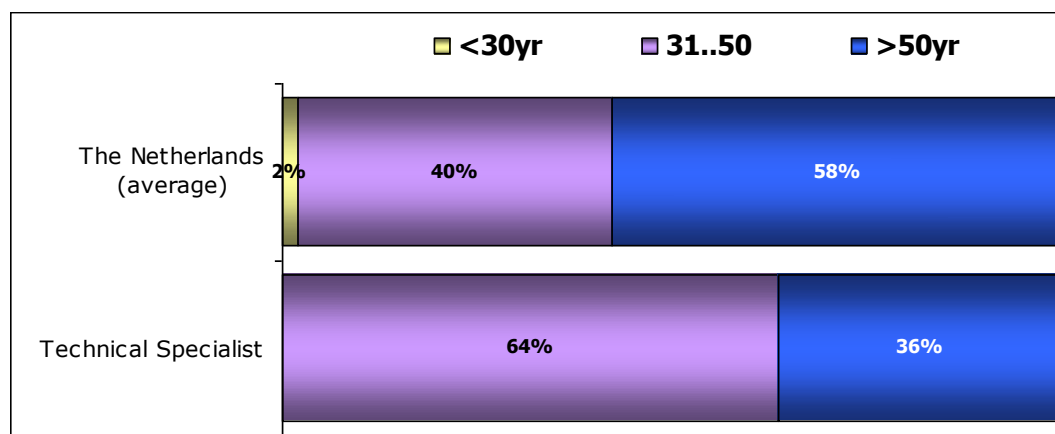


Figure 21 Profile Distribution by Age Range

The segmentation of profiles by gender (section 6.1.2) provides evidence that the female representation in the Netherlands is very limited, as indeed it is across Europe. Netherlands shows the lowest rate (10%) of women across Europe along with Belgium and Spain in this sample.

The results of the educational level questions (section 6.1.3 and 6.1.4) suggest that the level of attainment of degrees is better than the European average. This could be attributed to the fact RI accreditation requires at least a BA-level of education. For ICT Professionals in the Netherlands to hold the RI status, it is necessary to have both the required education and work experience. In detail, the requirements are:

- A Bachelor degree or higher (EQF/NLEQF 6) ICT studies,
- work experience: based upon the recent experience candidate needs to poses competences equal to the e-CF level 3 or higher,
- a minimum of 3 years work experience in the ICT arena,
- a candidate needs to hand in two case studies,
- agree to the code of conduct, by agreeing the code of conduct the professional can be held accountable by the disciplinary tribunal for his/her professional effects,
- ensure that career long learning is met, minimum level of Permanent Education (PE) points required per year.

An ICT professional which meets the criteria will be registered in a public register.

In the register you can find,

- the year in which the reassessment should take place,
- the person meets the Permanent Education requirements,
- the person received a disciplinary measure and for which period.

The ICT professional will be reassessed, so he/she is allowed to use the title for 4 years at the maximum.

With regards to the profile distribution by IT-focused education, only 60% of respondents have an IT-focused background. This means, that 40% of Dutch professionals have an education in which IT was only a side subject or not significant in their studies. Although this appears low it is higher than the European average of 34%.

For the level of Competence Proficiency Index (section 3.3) of Dutch respondents, it appears that the results compare favourably in three out of the five areas at European level: Enable area (16.7%, +1.7% than the European average), Plan area (26.6%, +2.5%), and Manage area (21.9%, +4.3%). On the other side, results show a gap ranging from -3% to -5% in the Build area (20% vs. 25%) and in the Run area (26% vs. 29%).

Figure 22 shows the difference between the CPI in the Netherlands and the corresponding European average CPI. In general, Dutch CPIs in the sample are lower than the European average in the Build and Run area, but they do not present significant gaps. The largest variance, lower than the European CPI, appears for Design & Development (-8.9%) and User Support (-7.6%). On the other hand, Dutch CPIs are higher than the European average for ICT Quality Strategy Development (+11.5%), Business Change Management (+10.3%), IT Governance (+7.8%), and Information Security Management (+7.7%).

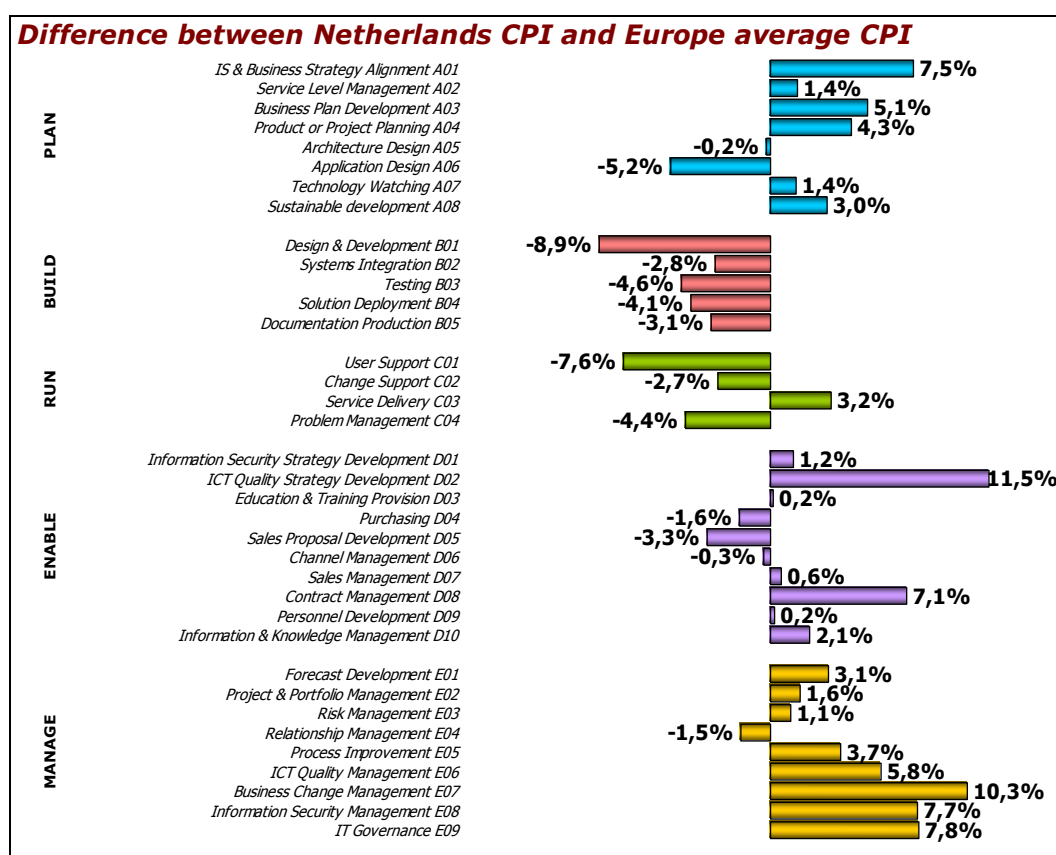


Figure 22 Competence Proficiency Index – Differences to European Average

Some interesting results arise from the comparison between competences of ICT professionals working in micro/small organisations (1-50 employees) and those working in medium/large organisations (more than 50 employees). Figure 23 shows that ICT professionals working in micro/small organisations have a general better competence in all five areas even if there are some noticeable gaps for Service Delivery (-12%) and Education & Training Provision (-10%).

Moreover, it is remarkable that almost one out of four Dutch ICT professionals is self-employed, which is about three times as high as the European average with 8% and therefore the highest rate among European countries. According to national experts the number of self-employed ICT professionals in the Netherlands was always that high.

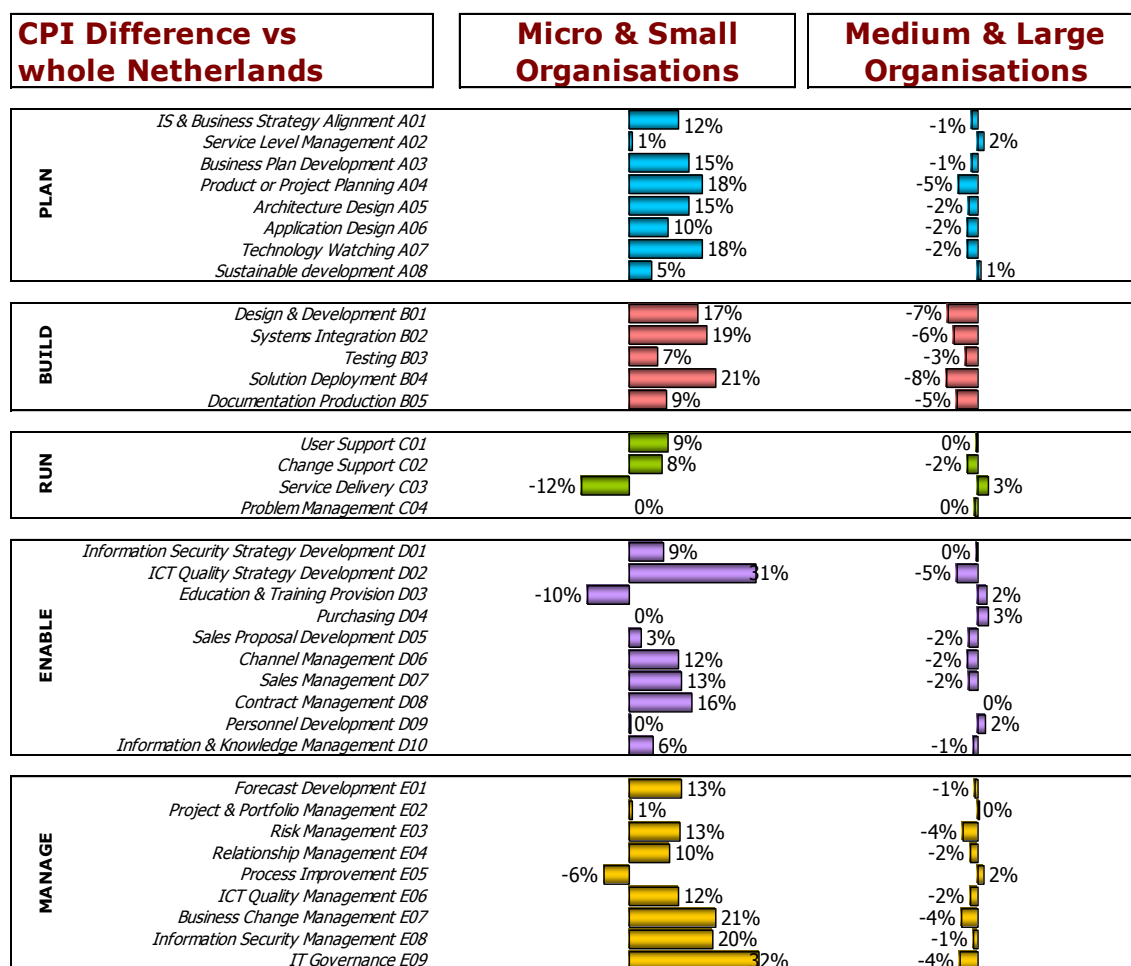


Figure 23 CPI Difference versus whole Netherlands

A deeper analysis of the Competence Proficiency Indexes compared to each profile requirement is fundamental in order to design detailed training paths to cover the competence gaps for each Proximity Profile of each respondent.

For example, the analysis of the three main competences of the Technical Specialist profile reveals that Dutch Technical Specialists suffer a competence gap compared to their European colleagues in Problem Management (-4%) and in Change Support (-10%), while in Service Delivery they gain a similar CPI (+1%).

9 Annex

9.1 Proximity Profiles – Overview

9.1.1 Profile Distribution by Age

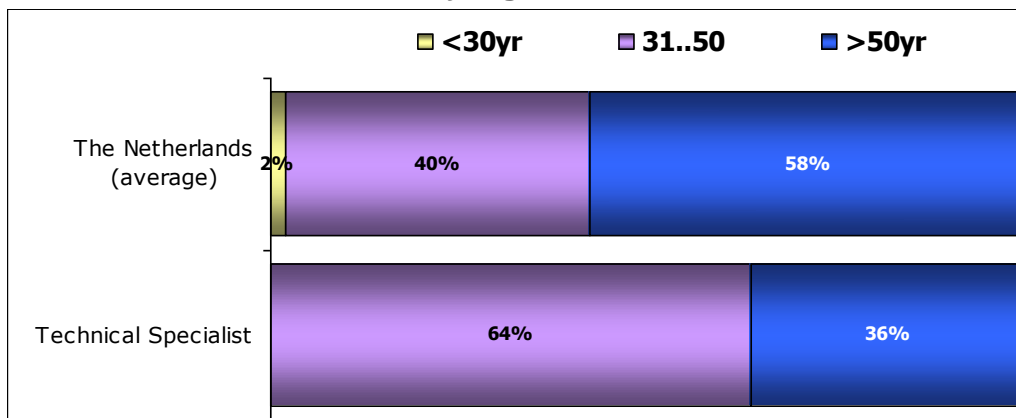


Figure 24 Proximity profiles - profile distribution by age

9.1.2 Profile Distribution by Gender

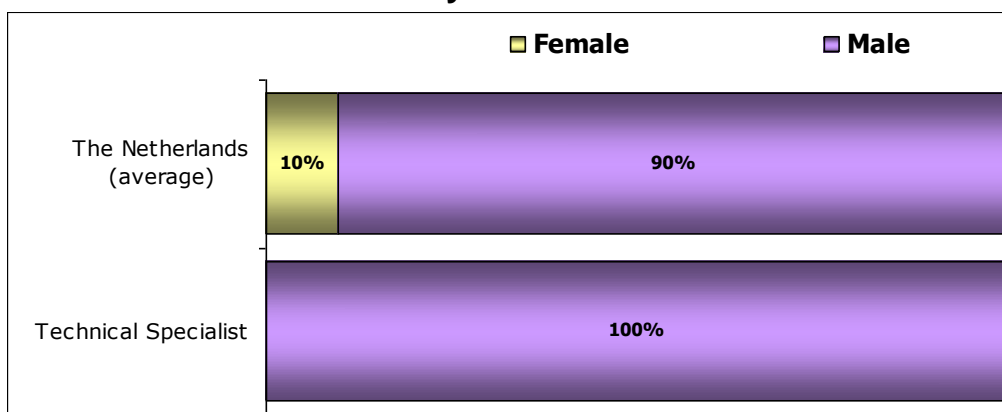


Figure 25 Proximity profiles - profile distribution by gender

9.1.3 Profile Distribution by Education Level

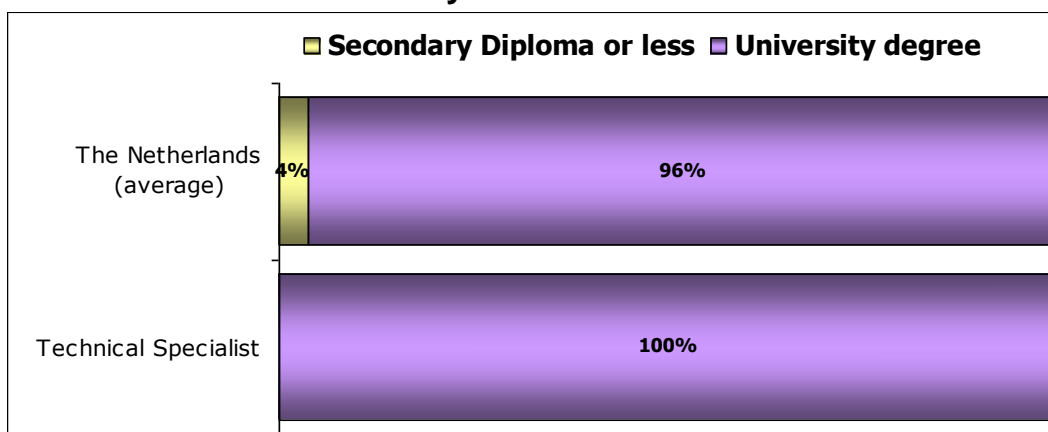


Figure 26 Proximity profiles - profile distribution by education level

9.1.4 Profile Distribution by IT Education

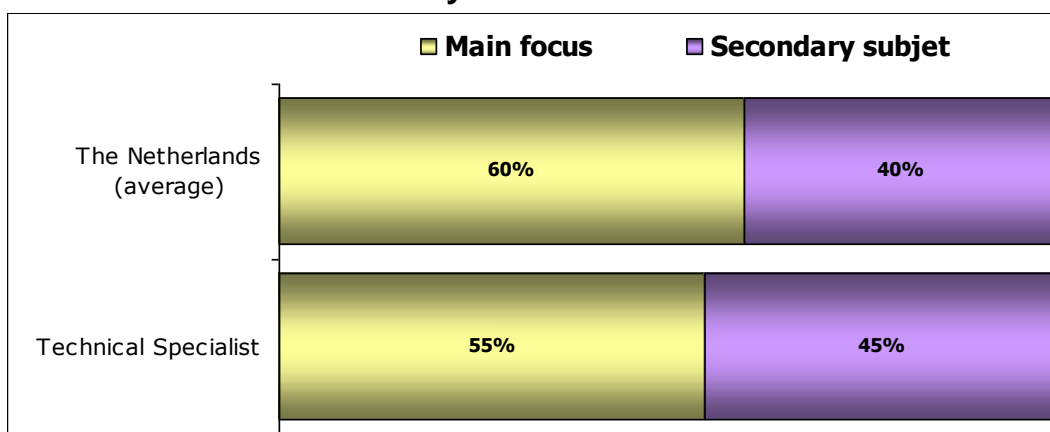


Figure 27 Proximity profiles - profile distribution by IT education

9.1.5 Profile Distribution by Industry

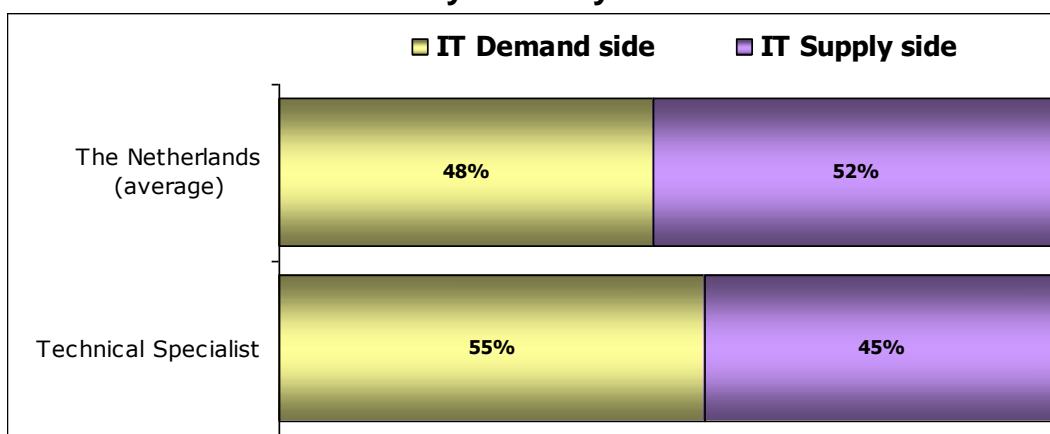


Figure 28 Proximity profiles - profile distribution by industry

9.1.6 Profile Distribution by Enterprise Size

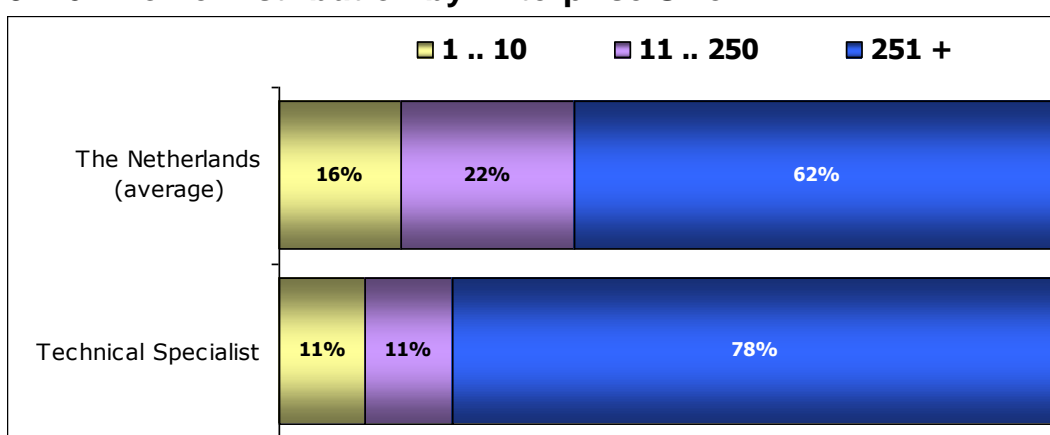


Figure 29 Proximity profiles - profile distribution by enterprise size

9.1.7 Profile Summary Table

	Europe	The Netherlands	SR4 Technical Specialist
Cases	1745	52	11
Age			
<i>Mean</i>	41,7	49,8	46,8
<30 yr	16%	2%	-
30 - 40	29%	12%	18%
40 - 50	33%	29%	45%
50 - 60	18%	52%	36%
61 - ..	5%	6%	-
Gender			
Female	15%	10%	-
Male	85%	90%	100%
Education			
Secondary or less	14%	4%	0%
University (Graduate or more)	86%	96%	100%
4th Level (Masters/Phd)	40%	50%	45%
IT Educational			
IT was the main focus of my education	66%	60%	55%
IT was a side subject	23%	29%	18%
IT was not significant in my curriculum	11%	12%	27%
Current professional status			
Full time employee	78%	69%	82%
Part time employee	2%	4%	0%
Self-employed	8%	23%	9%
Student / Unemployed / Retired	11%	4%	9%
Number of employees			
1 - 10	11%	16%	11%
11 - 50	13%	4%	0%
51 - 250	22%	18%	11%
251 - 1000	18%	20%	33%
> 1000	36%	42%	44%
Industry			
Mainly on IT demand side	49%	48%	55%
Mainly on IT supply side	51%	52%	45%
Proximity index	87,0	88,4	95,0
<i>Min</i>	40	44	59
<i>Max</i>	100	100	100
Competence index			
A - Plan	24%	27%	20%
B - Build	25%	20%	26%
C - Run	29%	26%	50%
D - Enable	15%	17%	12%
E - Manage	18%	22%	18%
Competence index			
A01 % IS & Business Strategy Alignment	23%	30%	22%
A02 % Service Level Management	20%	21%	22%
A03 % Business Plan Development	18%	23%	6%
A04 % Product or Project Planning	32%	36%	23%
A05 % Architecture Design	31%	31%	27%
A06 % Application Design	29%	24%	18%
A07 % Technology Watching	31%	33%	42%
A08 % Sustainable development	9%	12%	5%
B01 % Design & Development	23%	14%	16%
B02 % Systems Integration	24%	22%	34%
B03 % Testing	22%	17%	17%
B04 % Solution Deployment	25%	21%	24%
B05 % Documentation Production	34%	31%	45%
C01 % User Support	35%	28%	42%
C02 % Change Support	32%	30%	62%
C03 % Service Delivery	21%	25%	48%
C04 % Problem Management	29%	25%	48%
D01 % Information Security Strategy Development	16%	18%	22%
D02 % ICT Quality Strategy Development	18%	30%	32%
D03 % Education & Training Provision	21%	22%	7%
D04 % Purchasing	15%	14%	9%
D05 % Sales Proposal Development	16%	13%	6%
D06 % Channel Management	4%	4%	0%
D07 % Sales Management	5%	6%	0%
D08 % Contract Management	13%	20%	9%
D09 % Personnel Development	22%	22%	27%
D10 % Information & Knowledge Management	20%	22%	13%
E01 % Forecast Development	11%	14%	9%
E02 % Project & Portfolio Management	20%	22%	6%
E03 % Risk Management	16%	17%	16%
E04 % Relationship Management	24%	22%	10%
E05 % Process Improvement	23%	27%	21%
E06 % ICT Quality Management	13%	19%	26%
E07 % Business Change Management	18%	28%	22%
E08 % Information Security Management	14%	22%	31%
E09 % IT Governance	18%	26%	23%

9.2 Proximity Profiles – Details

9.2.1 Technical Specialist

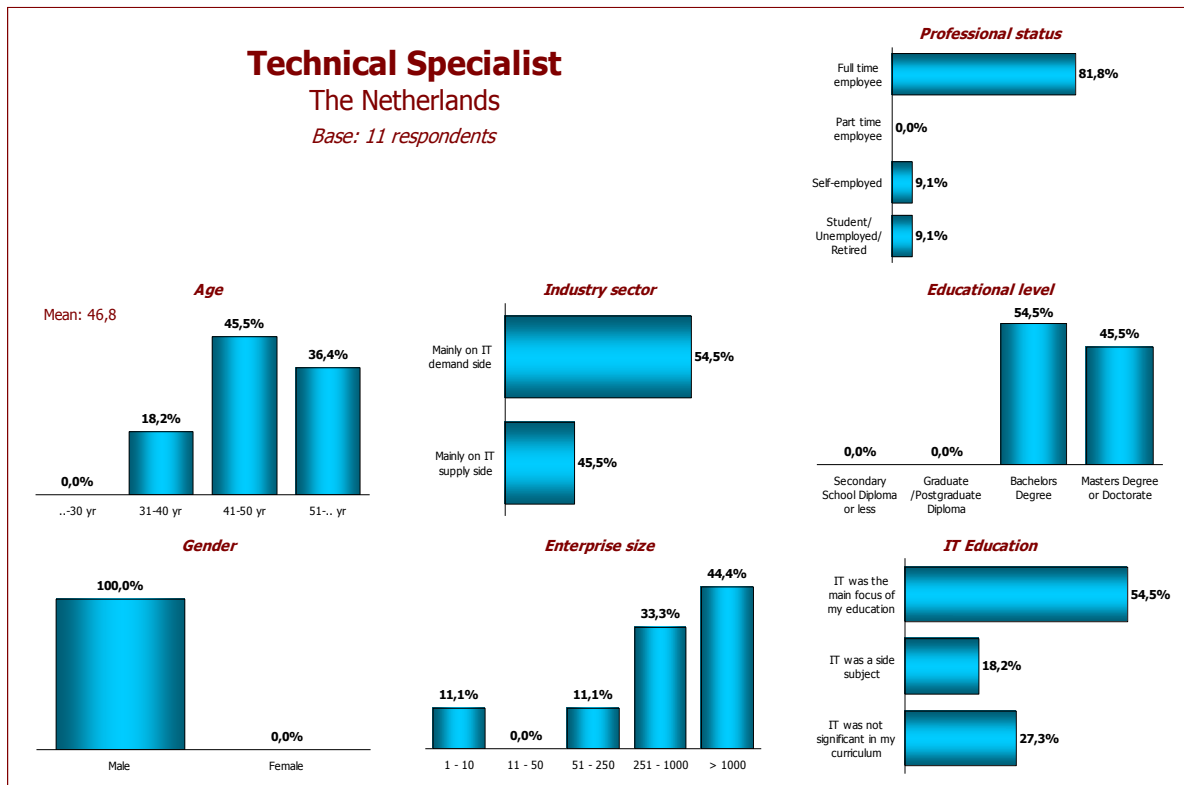


Figure 30 Proximity profile - Technical specialist