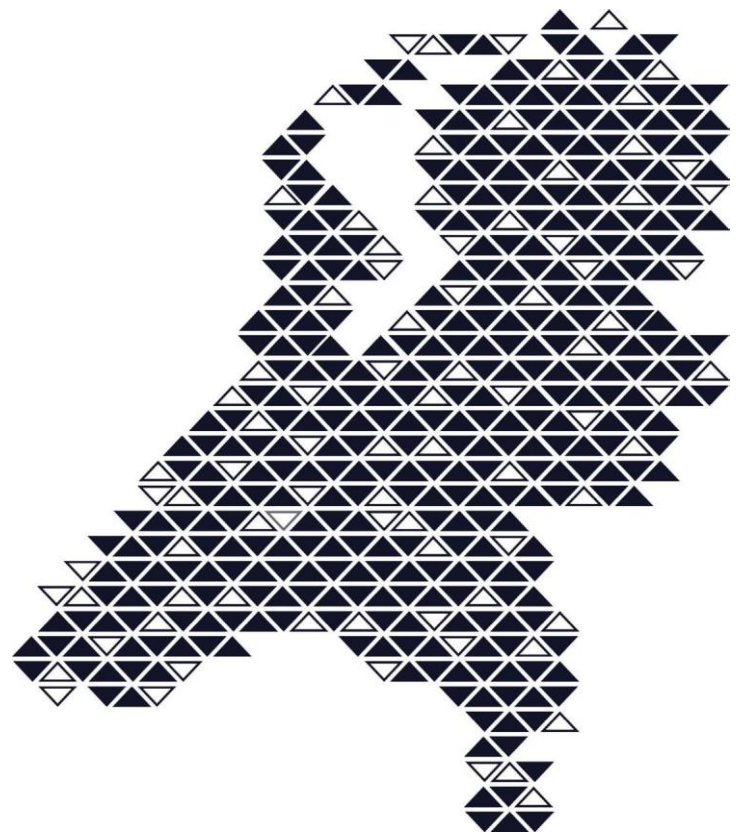


◁ human
▽ capital
▶ agenda

ICT.

Course document

**1 million ICT
professionals in 2030,
for a successful
digital transition of
Netherlands**



Introduction Course document

Only with enough ICT professionals can the Netherlands take full advantage of the opportunities offered by digitisation. To realise the Netherlands' digitisation ambitions, at least one million ICT professionals will need to be employed in the labour market by 2030, as described in the Digital Economy Strategy and the Green and Digital Jobs Action Plan. This means a growth of 60,000 ICT professionals per year, while the number of ICT professionals has actually decreased in 2023. Both the government and digital industry associations have stressed the need to have a multi-year, coordinated implementation strategy to address the shortage of ICT professionals^{1,3}.

The Human Capital Agenda ICT (HCA ICT)² is developing a joint action-oriented implementation strategy with the central government, industry associations, all provinces, employers, regional initiatives and other public and private parties, with targets at a local, regional and national level. This is one of the actions included in the Green and Digital Jobs Action Plan.

In late 2023, involved stakeholders started preparations to apply to the National Growth Fund (NGF) to fund part of this implementation strategy. When it became clear that the NGF would lapse, all stakeholders together said: we are going ahead. After all, the problem remains, AND the momentum is there. Much has already been achieved in the past six months. In all provinces, the importance of the movement that has been initiated has been underlined, and Region boosters have developed plans together with all relevant regional stakeholders, in line with a nationally defined shared vision and objectives developed with contributions from more than 130 organisations.

This course document has been prepared ahead of the presentation of the Joint Implementation Plan in October 2024. This is the plan we intend to implement, left or right, to solve the major shortages in ICT. The plan aims to increase the supply of ICT professionals, with a focus on increasing the proportion of people within the Netherlands who choose an ICT profession.

1. ICT chronic shortage action plan
2. HCA ICT: Directs and coordinates with Min. EZK on achieving the Cabinet target of: one million ICT professionals by 2030.
3. Pr-eDicit: ICT Education and Labour Market Dashboard - CA-ICT, PTVT, NLdigital

1. URGENCY: THE IMPORTANCE OF ICT PROFESSIONALS

Why a shortage of ICT professionals is a problem

In all provinces in the Netherlands, there is a major shortage of ICT professionals³ in both public and private organisations, resulting in an inhibiting effect on the innovation of products, services and processes in all sectors. Within this plan, we consider an ICT professional to be one who works on the digitisation of organisations and society. Digitalisation offers a solution within many sectors to do more with fewer people, which is crucial given the increasing ageing population, falling labour productivity and labour market tightness. In addition, smart digital solutions help address societal issues in areas such as agriculture, water, food, safety, sustainability, healthcare and education, and contribute to economic growth.

To realise the Netherlands' digital transition, the Cabinet has set the goal of having at least one million ICT professionals working in the labour market ICT by 2030, with a focus on specialisations in artificial intelligence, cybersecurity and other digital technologies^{4,5}. The Netherlands thus aims to maintain a strong competitive position internationally⁶, minimise risky digital dependencies⁷ and develop into a safe, prosperous and ethically responsible digital society.^{1,2,8,9,10}

While the ICT labour market still showed significant growth in 2022 with 70,000 new ICT professionals, bringing the total to 673,000, growth fell completely flat in 2023. Instead of the expected increase, the number of ICT professionals fell by 3,000 to 670,000⁷. To have at least one million ICT professionals working in the labour market by 2030, an absolute growth of 60,000 ICT professionals per year is needed, taking into account the expansion and replacement demand. Given the tightness in the entire labour market, this is a complex issue that has a great impact on the development of the (digital) economy and the societal challenges we face in the Netherlands.

Only with enough ICT professionals can the Netherlands take full advantage of the opportunities offered by digitisation, and realise upcoming transitions. More ICT professionals will also greatly benefit the Netherlands, an estimated **GDP growth of 2 billion a year**.

4. Digital Economy Strategy - Min. EZK
 5. National Technology Strategy - Min. EZK
 6. Mainline agreement PVV, VVD, NSC, BBB
 7. Digital Open Strategic Autonomy Agenda (DOSA) - Min. EZK
 8. Dutch Cybersecurity Strategy 2022-2028 - Min. J&V
 9. Work agenda Value-driven Digitisation - Min. BZK
 10. Green and Digital Jobs Action Plan - Min. EZK, Min. OCW, Min. SZW

2. WHY DO WE HAVE TOO FEW ICT PROFESSIONALS?

In the Netherlands, the demand for ICT professionals has been significantly greater than the supply of ICT professionals for years. Ideally, there is sufficient inflow of ICT professionals from education, retraining programmes and (if politically desirable) inflow of talent from abroad into the labour market. For some time now, the inflow from the various streams within the education-labour market chain has not been sufficient to meet the labour market ICT demand.

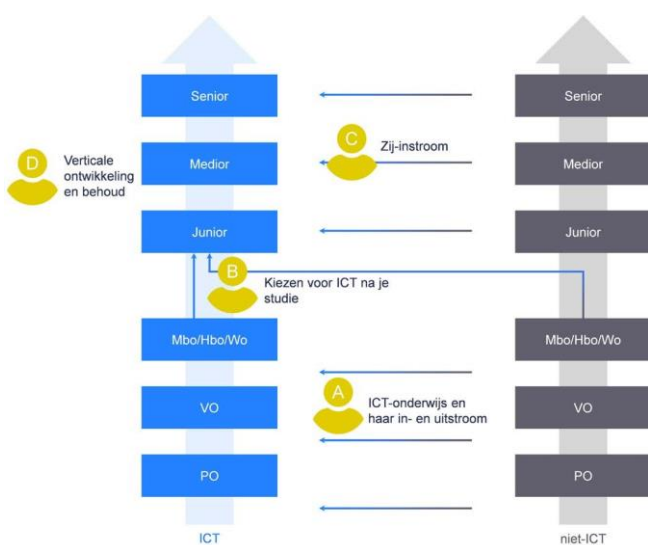
These different flows in the education-labour market chain are not all equal. In 2022, in which many ICT professionals were recruited, there was an inflow of about 110,000 professionals and an outflow of about 45,000 professionals. The largest source of inflow was lateral inflows from other professions (36%), followed by inflows from education (22%), inflows from abroad (22%) and inflows from people who were in a benefit position. Slightly less than half of the inflow from education was from ICT training; slightly more than half followed non-ICT training. Thereby, those entering from education can usually start working as juniors, but cannot immediately fill the demand for medior or senior positions. And: the inflow from education will never be enough to reach 60,000 net new entrants annually; we will also have to focus on lateral inflow and retention. The biggest reason for outflow of ICT professionals in 2022 was choosing other work (40% of the outflow), but compared to other 'sectors' ICT professionals are honourable.

The problem in a nutshell: too few people choose to work in digital jobs (as ICT professionals). Whether it is choosing to study ICT, choosing an ICT starter job, choosing to work in ICT as a lateral starter, or choosing to stay active as an ICT professional: to get more ICT professionals, we need to ensure that more people choose ICT. Without additional efforts, we will not get this done. It is also up to the government: after all, various **system and transition failures** mean that the problem will not solve itself. The plan's approach focuses on people, looking specifically at the moments when people do/do not choose ICT and why they do/do not choose ICT at those moments.

Moments when people do/don't choose ICT

Whether or not to start working as an ICT professional cannot be traced back to a single moment of choice. People make a large number of choices throughout their lives. Yet there are a number of 'bigger' choice moments that leave quite a mark on an individual's educational and labour market career. For example: which school do I go to, which subjects do I choose, which profile do I choose, which education do I choose, where do I work after my education, do I want to retrain or upskill myself, do I want to change professions? Within this plan, we focus on four groups of choices:

- Choosing/not choosing ICT education (po/vo) and ICT courses (mbo/hbo/wo)
- Choosing/not choosing ICT professional after studies
- Choosing yes/no to start working as an ICT professional from lateral entry
- Choosing/not choosing to remain (retain) and develop ICT professionals

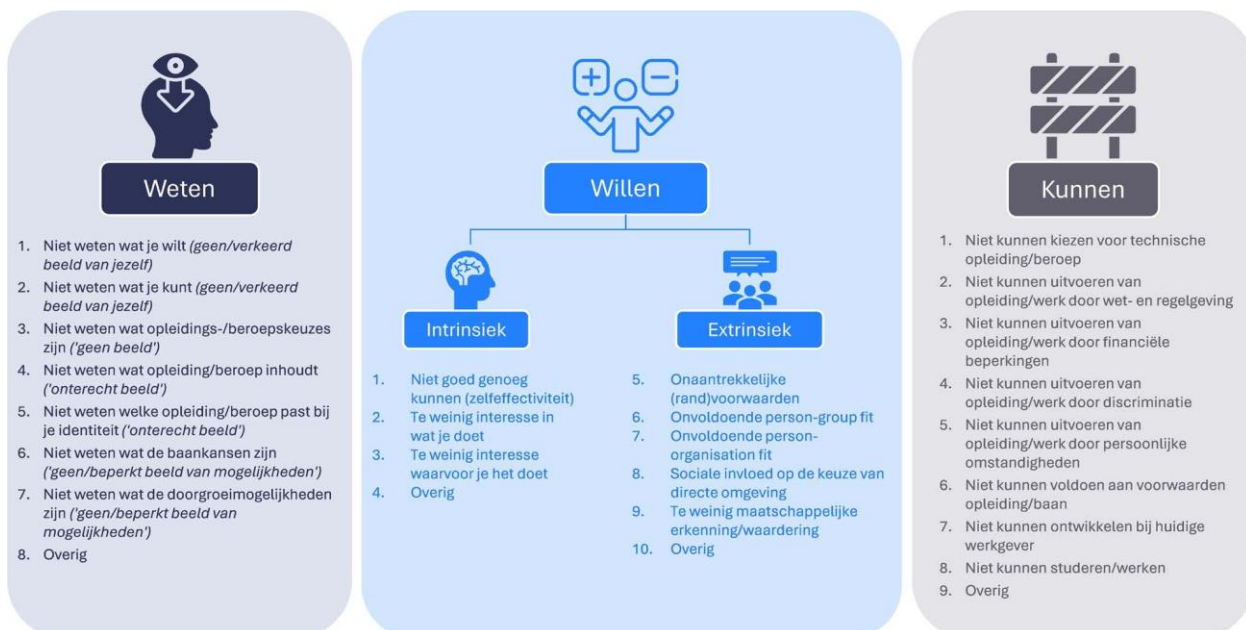


Why people do/don't choose ICT

The choice of an education, profession or subject is influenced by many factors. These factors can be summarised in the three categories of 'Knowing', 'Wanting' and 'Ability'.

1. **Knowing.** People are often unaware of a number of facets. People regularly do not know what they themselves want and can do, what education and career choices are available, what certain education and professions exactly entail, what education and professions fit their identity, what the job opportunities of certain professions are, and what the career opportunities and/or prospects are for certain professions. People will (unconsciously) base their choices on the image they have of themselves, education, professions and the labour market.
2. **Wanting.** People will not choose ICT if they do not want to. Both intrinsic and extrinsic motivation play a role here. Important for intrinsic motivation is that people are interested in what they are doing and what they are doing it for. It is also important that people feel they are good enough at ICT ('self-efficacy'). For extrinsic motivation, factors include how attractive the (peripheral) conditions offered are, how well people fit into the group and the organisation, social influence/pressure from the immediate environment, and the social recognition and appreciation linked to the study programme and the profession.
3. **Ability.** Finally, people should also be able to choose ICT. Sometimes subjects, courses or jobs are simply not offered. Other causes include restrictive laws and regulations, not being able to finance a course, not being able to start due to discrimination, not being able to meet the conditions for a course or job.

Research shows that intrinsic motivation including the underlying perception of ICT training and -professions are the main reasons for not choosing ICT. So there should be sufficient attention to this. But the other factors are also relevant: for people to choose ICT, it is important that the signals for both knowing, wanting and being able are green.



3. VISION AND AMBITIONS: WHERE DO WE WANT TO GO?

The shared vision

With one million ICT professionals by 2030, the Netherlands aims to develop as a safe, prosperous and ethical digital society. Achieving the goal of one million ICT professionals will require a transformation across the ICT education-labour market chain.

The plan will work towards:

- A nationwide network of organised **ecosystems** in which education and employers (public and private) work together to respond smartly to the changing demand for ICT professionals on the ICT labour market. They ensure that all potential ICT professionals **know** what ICT professions entail, **want to** be ICT professionals, and **can** become and remain so.
- An overarching **national coordination** that, together with relevant national and regional stakeholders, ensures **steering and synergy on a number of key cross-regional themes**, such as **skills & talent-oriented recruitment**, an **inclusive labour market ICT** and the latest digital **Key technologies**.

Ambition on knowing

All students and employees are aware of the opportunities and possibilities within the ICT labour market and have a good idea of what working as an ICT professional can entail. During a (school) career, there are ample opportunities to become acquainted with ICT professions, gain insight into one's own skills, find out which education/profession suits them and what career opportunities are available. Employers are actively involved to give students and employees a good idea of the various career opportunities for ICT professionals, both within the ICT sector and within other sectors.

Ambition at will

All pupils, students and graduates are confident in their digital skills and abilities, and have had positive experiences with ICT for the purpose of enhancing intrinsic motivation. Employers adopt a skills-focused mindset, provide excellent onboarding processes and create inclusive and a socially safe working environment with ample opportunities for advancement (extrinsic).

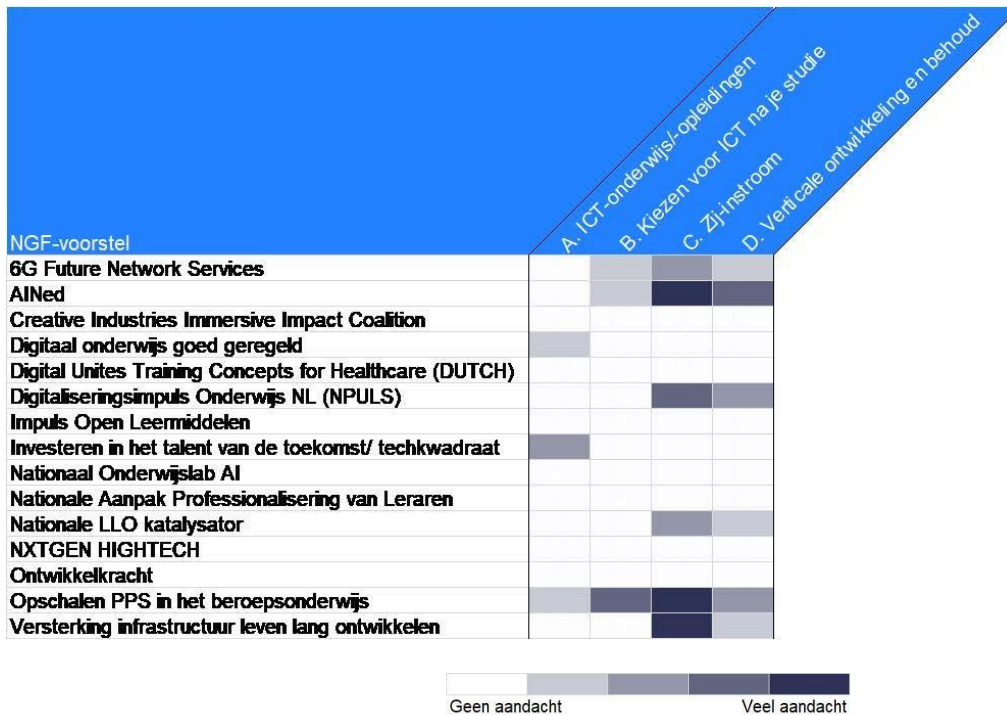
Ambition on can

From primary education to university education, up-to-date, context-rich and modular ICT education is provided by sufficiently skilled personnel. Access to retraining and refresher courses ensures that both ICT and non-ICT graduates can start or further develop their ICT careers. Employers are committed to retaining and further developing ICT professionals within the organisation, sector or labour market ICT.

Connection to existing initiatives

Although much is already happening in the Netherlands, it is not yet enough to realise the shared goals and ambitions. This plan therefore gives direction to the additional efforts needed. **Naturally, this plan builds on all the initiatives that are already in place.** At both national and regional level, considerable efforts are being made to get more people working as ICT professionals.

At the **national level**, for example, there are existing pathways (co-funded by the National Growth Fund) that focus on part of the issue. For example, Techkwadraat is working on boosting ICT education, AINed is focusing on increasing the number of AI professionals, and within 'Scaling up PPP vocational education-business' there is a focus on upskilling professionals. Below is an overview of the four 'moments of choice' and the focus of other Growth Fund proposals.



At **regional level**, there are several initiatives addressing the issue. Together with all regions, we have mapped existing initiatives. This inventory provides a basis to connect to what is already there, to scale up good practices and to set up effective initiatives also in regions where such an approach is still lacking. The regional inventories also serve as a basis for the regional plans.

4. WHAT ARE WE GOING TO DO: THE JOINT IMPLEMENTATION PLAN

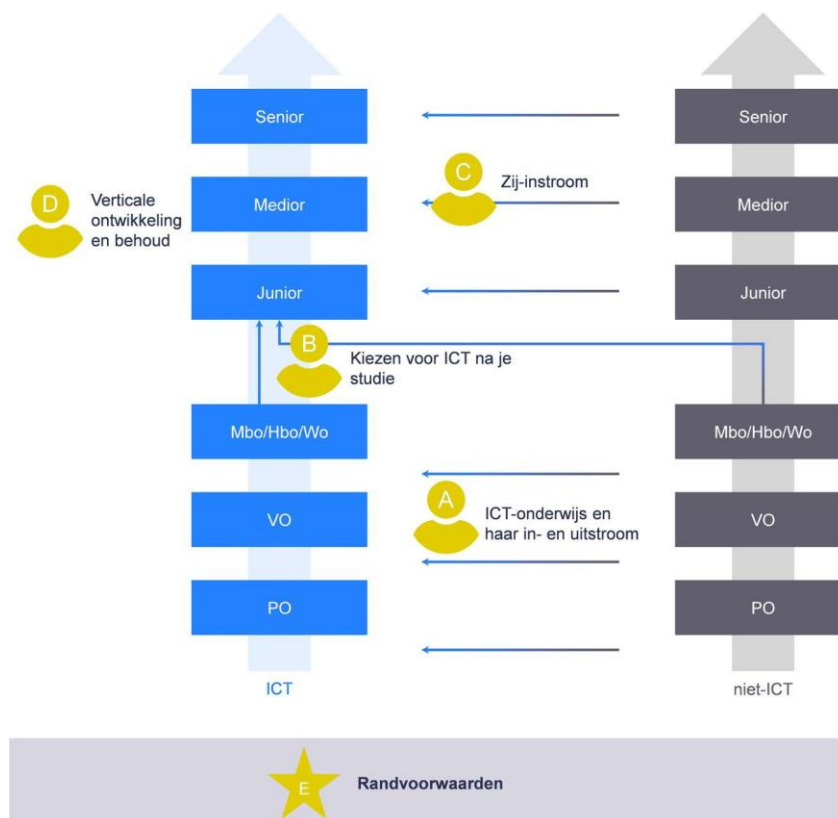
Actions at national, interregional and regional level

With the Joint Implementation Plan, we are setting up a joint approach to achieve 1 million ICT professionals by 2030. We will take actions at national, interregional and regional levels:

- **Nationwide.** This concerns actions that [1] transcend the regional level and [2] have national coverage. These include actions such as the overall coordination of the National Implementation Plan, developing generic (financial) instruments, and setting up country-wide monitoring.
- **Interregional.** This refers to actions that [1] transcend the regional level and [2] target several, but not all, regions. Examples include multilateral alignment for initiatives that cross regional borders or sharing knowledge on similar initiatives between two regions.
- **Regional.** This refers to actions that [1] take place at the regional level and [2] concern only the region in question. Examples include involving local companies in education, regional awareness campaigns, or providing concrete retraining offers in the region. Each region has its own regional plan for this.

Five lines of action

We structure our joint actions using five action lines. These follow the four choice moments as described earlier, supplemented by a fifth action line 'Preconditions' needed to realise the necessary building blocks and infrastructure in the Netherlands.



THE ACTIONS

Committed stakeholders believe the actions below will lead to 1 million ICT professionals by 2030. These are the actions we are committed to. This means that coalitions of national and regional parties will develop these plans in the coming period, and we will look for specific funding opportunities to realise these plans.

Acties	Actielijnen				
	A	B	C	D	E
1. Passend en flexibel(om- en bij-)scholingsaanbod.	●	●	●	●	●
2. Opleiden en versterken van (hybride)ICT-docenten.	●	●	●	●	●
3. Ieder kan inzicht krijgen in eigen loopbaanmogelijkheden in ICT.	●	●	●	●	●
4. Verbeteren van het imago van ICT-beroepen.	●	●	●	●	●
5. Financiële drempels verlagen voor(om- en bij)scholing.	●	●	●	●	●
6. Coaching-on-the-job van starters, omscholeners en doorgroeiers.	●	●	●	●	●
7. Stimuleren van een inclusieve werkomgeving.	●	●	●	●	●
8. Stimuleren van talentgericht werven.	●	●	●	●	●
9. Coördinatie en regie: landelijk en regionaal.	●	●	●	●	●
10. Kennisontwikkeling en -deling.	●	●	●	●	●
11. Organiseren van financiering voor uitvoering.	●	●	●	●	●

Appropriate and flexible training and retraining offer.

There must be a suitable training offer for everyone to get started as an ICT professional. Both in regular secondary and higher vocational education and in non-formal education. New education and forms of education are needed to offer up-to-date education that matches the labour market and the needs of students and employees. This also means that we have to take into account specific target groups and situations within our offer.

Training and strengthening (hybrid) ICT teachers.

The Netherlands needs more teachers who can teach up-to-date knowledge and skills in an effective and enthusiastic way; cooperation between education and employers is crucial for this.

Everyone can gain insight into their own career opportunities in ICT.

You can't choose something you don't know and you may not want to choose something you have no or limited idea about. We make it clear to people what opportunities there are, what career prospects there are, and what skills they can develop. Here, we are thinking about the adaptation of a common Skills language, a tool to make personal career paths transparent, and education and employment connected to it.

Improving the image of ICT professions.

Image formation is crucial for career choice; together we ensure that students and workers have a good and broad picture of what ICT can be and can entail. Here, we mainly think about having experiences that give a correct and appealing image of ICT work, and give potential digital professionals a sense of self-efficacy. Again, specific target groups will have to be taken into account.

Lower financial barriers to (re)education.

Further or retraining can be a big step for people, especially when the helm is largely changed. This step is big enough; financial barriers should not stand in the way of developing into an ICT profession. This could include, for instance, a training fund.

Coaching-on-the-job of starters, retrainers and progressers.

It is not easy for all employers to properly land or guide new ICT professionals into medior and senior positions, especially when they are small(er) organisations. Together with the business community, we explore and develop programmes (such as traineeships or shared coaching pools) on how new ICT professionals and career changers can be quickly employable and get a warm landing in their new positions.

Encouraging an inclusive work environment.

We want everyone to feel at home working as an ICT professional. Together with employers, we work to create an inclusive working environment.

Encourage talent-based recruiting.

For a profession to be effective, it is less relevant what someone has done, but rather what someone can do. By shifting the focus to recruitment based on talent and skills, we appeal to more potential ICT professionals.

Coordination and direction: national and regional.

From existing structures, we will work with all stakeholders to coordinate our efforts at national, interregional and regional levels to effectively do the right things.

Knowledge development and sharing.

Together, we have a well-founded picture of what we need to do and, at the same time, there is still much to learn together about the effectiveness of activities, how best to organise things and how we can work together even more intelligently. We consciously focus on a reflexive approach. This will also involve additional efforts on a number of specific, important trans-regional themes such as Skills.

Organising funding for implementation.

To carry out all the actions properly, we also need people and resources to get started. Together, we will organise the funding needed to implement the plan and achieve the goals.

Action line A. ICT education and its inflow and outflow

This action line focuses on strengthening ICT education with the aim that more children and young people choose ICT. It is important to introduce people to ICT at an early age. After all, developing beliefs and attitudes towards digital technology and digital applications starts early. The experiences children and young people have with ICT, be it positive or negative, can also influence the perception and intrinsic motivation to engage with ICT. We also know that the extent to which children and young people feel they can put their talents to good use in ICT/technology is an important factor in whether or not they choose ICT. Getting them in touch and practising with this at an early age can strengthen their sense of 'self-efficacy' ("am I good enough at this?").

There are many (upcoming) initiatives in the Netherlands to better integrate engineering and ICT in education. Consider, for example, the Techkwadraat programme and the Strong Technology Education programme. For this reason, the focus of this plan is not on education, but on linking these programmes to the Joint Implementation Plan, and also supplementary to parts of education that are more directly related to the labour market: further development of educational forms (e.g. more dual education) and realising more (hybrid) ICT teachers.

A. Onderwijs	Weten	Willen	Kunnen	Landelijk	Interregionaal	Regionaal
1. Passend en flexibel (om- en bij-) scholingsaanbod						
2. Opleiden en versterken van (hybride) ICT-docenten						
...						

Below are some key actions that are outside the direct scope of the Implementation Strategy but related to it.

Meer aandacht up-to-date ICT-onderwijs op het primair en voortgezet onderwijs (Techkwadraat)						
Verbetering van het imago van ICT-beroepen bij leerlingen en ICT-studenten						
Stimulering doorlopende leerlijnen in het onderwijs						
Meer aandacht voor diversiteit en inclusie in ICT-opleidingen						
...						

Action line B. Choosing ICT after your studies

The end of studies is a natural time for many to decide what to do in the job market. When making that choice, the basis is awareness of what all there is to choose from combined with a person's views on those choices. Many people have an incomplete picture of what work as an ICT professional can entail and the extent to which it suits them as a person. Within this action point, we work on this by improving the image and perception of this professional field already during studies, and helping graduates by creating exploratory and learning starting situations on the labour market (e.g. through traineeships). And should people from non-ICT want to move to ICT, we ensure that the costs of retraining or further training do not constitute a financial threshold.

We also think it is important that the labour market for ICT professionals and graduated talent know how to find each other. Merely looking at what diploma someone has obtained is a simple and limited way of looking at things. We focus on talent-oriented recruitment by looking at someone's potential and skills. Finally, the working field of ICT professionals must offer an attractive working environment for everyone. That is why we continue to work on inclusive work environments.

B. Kiezen voor ICT na studie	Weten	Willen	Kunnen	Landelijk	Interregionaal	Regionaal
1. Versterken van onboarding van starters (o.a. <u>traineeships</u>)						
2. Verbeteren imago ICT-beroepen						
3. Stimuleren van talentgericht werven						
4. Financiële drempels verlagen voor (om- en bij-) scholing						
5. Bieden van persoonlijk loopbaanperspectief in de ICT						
6. Stimuleren van inclusieve werkomgeving						
...						

Action line C. Lateral entry

To realise one million ICT professionals in 2030, lateral entry is expected to be the largest source of new recruitment. This target group is largely already active on the labour market and can develop into ICT professionals through retraining or in-service training. This retraining does not necessarily have to take place in the lecture halls of public and private providers; people can also learn a lot on the job itself ('learning-on-the-job') or even at home in their own time. It is also good to keep in mind that lateral entry does not necessarily mean that people have to start working as ICT professionals for a new employer. People can also take a step within their own organisation. The step within the organisation, provided the opportunities exist internally, is even easier to take than having to change both jobs and employers.

The context and needs of potential lateral entrants vary widely. For example, if someone is working as a mediator or senior in a field other than ICT, they will not be likely to enter ICT at junior level. Among other things, one builds up certain financial commitments and life standards. A horizontal transition at a similar level is more realistic. The bottom line is that we are mindful of the integral situations people are in to enable lateral entry. We therefore keep an eye on different target groups and their specific needs.

Joint efforts focus on raising awareness (e.g. image building), enthusing and enticing (e.g. by creating attractive conditions) and facilitating (e.g. by appropriate and flexible training offers).

C. Zij-instroom	Weten	Willen	Kunnen	Landelijk	Interregionaal	Regionaal
1. Passend en flexibel (om- en bij-) scholingsaanbod						
2. Versterken van onboarding en coaching-on-the-job van omscholvers						
3. Financiële drempel verlagen voor omscholing						
4. Bieden van persoonlijk loopbaanperspectief in de ICT						
5. Stimuleren van inclusieve werkomgeving						
6. Versterken talentgericht werven						
7. Verbeteren imago ICT-beroepen						
...						

Action line D. Vertical development and conservation

We want to retain the people who are already active as ICT professionals by offering them good prospects for the future. This means that they can work in a pleasant working environment and have enough room to develop further. This also requires them to have a good idea of their career prospects: what could they do in the future and what do they need to do to get there? These are big questions to answer. For those who need it, we make sure personal coaching and mentoring is available.

By allowing ICT professionals to progress from junior to mediator and from mediator to senior, we also create 'space' in the labour market again for starters. We make sure that every individual can take a step forward, so that as a collective we make a big move towards those million ICT professionals in 2030.

D. Doorontwikkeling en behoud	Weten	Willen	Kunnen	Landelijk	Interregionaal	Regionaal
1. Financiële drempel verlagen voor (om- en bij-)scholing						
2. Bieden van persoonlijk loopbaanperspectief in de ICT						
3. Passend en flexibel (om- en bij-)scholingsaanbod						
4. Stimuleren learning- en coaching on-the-job						
5. Stimuleren van inclusieve werkomgeving						
...						

Action line E. Preconditions

To implement all the actions in this joint plan in practice, a national and regional infrastructure is needed. Therefore, in this action line we focus on the preconditions required to realise our joint goals. There is a broad consensus that we need coordination and direction at different scales: we need to coordinate and streamline our actions at both national and regional levels. In addition, we want to jointly give sufficient attention to cross-regional themes such as improving the image of ICT professions, lowering financial barriers to training, an inclusive ICT labour market and monitoring.

For effective collaboration, it is essential that all relevant stakeholders are actually engaged. We know from practice that it can be challenging to get employers broadly engaged in such plans; we are therefore explicitly committed to implementing this plan with the widest possible group of relevant stakeholders.

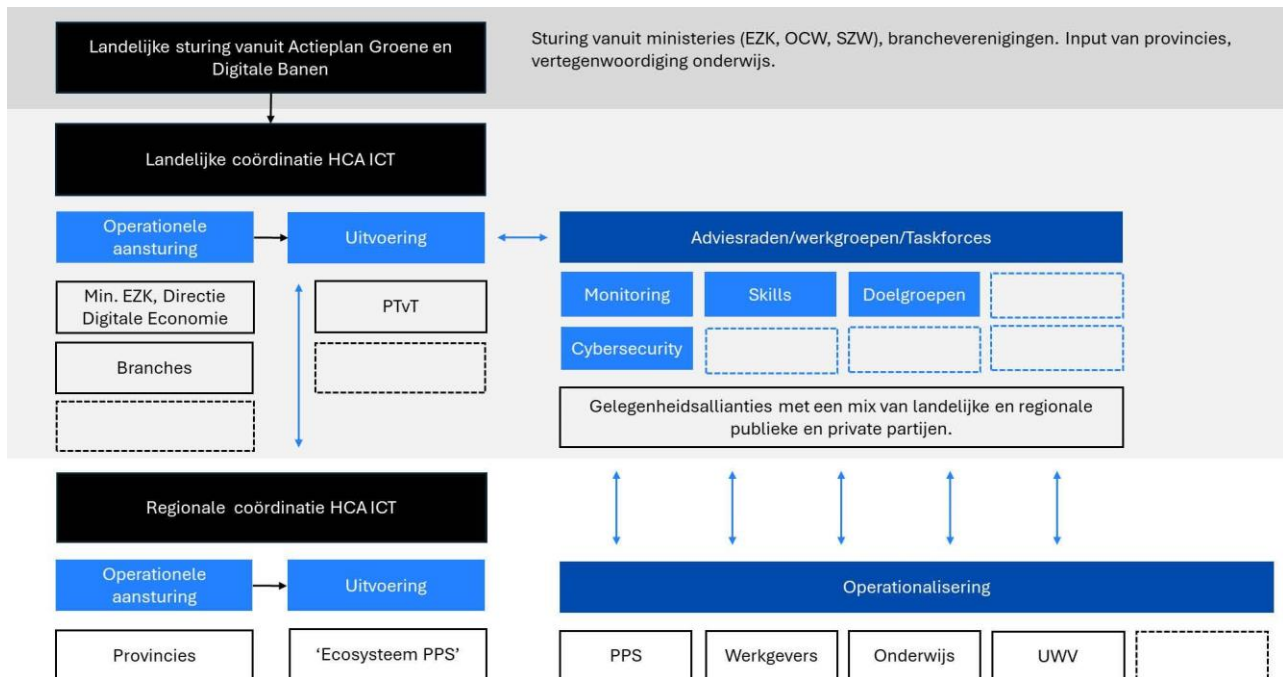
This joint plan is a starting point in 2024. Together, we will learn a lot in the coming years about our approach and what we can do to improve our approach. After all, we know that there is much we do not yet know. That is why we are committed to a reflexive and adaptive approach, facilitating learning from and with each other.

For this plan to succeed, we need people and resources to implement it. With stakeholders, we are looking for an appropriate way to finance the implementation of the intended actions.

E. Randvoorwaarden	Landelijk	Interregionaal	Regionaal
1. Landelijke en regionale coördinatie			
2. Organiseren financiering voor uitvoering			
3. Landelijke kennisontwikkeling en-deling			
4. Verbeterde aansluiting werkgevers op regionale pps-structuren			

Organisation set-up

The figure below is a first draft of the organisational structure of the HCA ICT. It was created based on discussions with stakeholders. This structure will be further finalised in the coming months.



Summary Regional Plans

Each province develops a Regional Plan of Action within the framework of the HCA ICT Joint Implementation Plan. These regional plans clearly identify the specific ICT shortage challenges, the most appropriate solution directions, the stakeholders involved in the implementation, and the appropriate budget.

Each region has its own unique characteristics and challenges, making customisation essential in the Regional Action Plans. These plans are a crucial part of the broader strategy to strengthen the ICT labour market and prepare it for future growth. To support this process, Regional Managers have been appointed for each province. These region boosters play a key role in coordinating local efforts, mobilising stakeholders and bringing together relevant information that contributes to the overarching objectives. Cooperation is central to this process. By acting together and sharing knowledge and expertise, we aim to find sustainable solutions to the challenges within the ICT labour market in each region. Specific strategies and actions developed to address ICT shortages and strengthen the local labour market are described within these regional plans.

The summaries below provide a brief overview of the more comprehensive plans for each region. These plans will be further developed and refined in the coming months.

South Holland

In South Holland, the educational infrastructure will be strengthened, cooperation between stakeholders encouraged, and existing investments protected. The action plan includes scaling up WE-IT, continuing 'new professional'/SME programmes within IT Campus Rotterdam, and strengthening IT Verband Zuid-Holland. This plan aims to achieve sustainable growth and prosperity by promoting digital transformation and strengthening local economic clusters.

Northern Netherlands (Groningen, Friesland, Drenthe)

In the Northern Netherlands, cooperation between educational institutions and companies is promoted to improve the intake and retention of ICT students, as well as retraining and upskilling through vouchers and traineeships. The action plan includes targeted actions to improve the image of the ICT sector, attracting women to ICT courses and jobs and supporting international talent with language classes and integration programmes. In addition, new opportunities in the digital sector will be discovered and exploited to boost regional development.

Overijssel

In Overijssel, the government, businesses and educational institutions are working together to increase the intake and retention of ICT talent. The action plan includes a structural approach with flexible forms of education such as retraining and micro-credentials, and drawing up a regional vision on living, working and learning, including energy transition and sustainability. Ongoing projects such as the Twenteboard and Werkcentrum Overijssel will be used to achieve these goals and increase the influx of various target groups into ICT and engineering courses.

Utrecht

In Utrecht, the focus is on increasing enrolment in STEM education, promoting retraining and further education, and improving the connection between education and market needs. The action plan includes investments in education and training, close involvement of companies in the educational offer, and the creation of a regional structure for the ICT labour market with a central role for the U-TECH community. It also makes transition paths more transparent and emphasises diversity, inclusion, and improved recruitment and retention strategies.

Gelderland

In Gelderland, employers and employees are supported in their needs, with a focus on lateral entry and upskilling, by strengthening and expanding existing initiatives such as Gelders Vakmanschap and House of IT. This is achieved by stimulating cooperation between labour market regions, trainers, employers and governments, responding quickly to developments in the ICT sector, and implementing scalable solutions in Arnhem and Nijmegen.

North Brabant

In North Brabant, new ICT developments are integrated into all levels of education, a culture of Lifelong Development (LLO) is promoted, and labour productivity is increased with smart ICT solutions. In doing so, existing successful projects are strengthened rather than developing new activities, with a selection of 13 initiatives that can be scaled up and connected through involvement of labour market regions, educational institutions and employers. The business community plays a crucial role in this demand-driven approach.

Limburg

Limburg is responding flexibly to the growing need for well-trained ICT professionals due to rapid developments in the ICT sector and social issues. This is achieved by building on existing successful initiatives, focusing on initial education and LLO pathways for retraining and upskilling, and effective cooperation and coordination in the region. Activities include strengthening initial education by adapting current curricula, strengthening existing LLO initiatives, and rolling out support tools.

Flevoland

In Flevoland, flexibility and integration of ICT skills in education are promoted by pooling efforts and resources, and specific targets such as intake from regular education, VMBO, Havo, VWO, non-ICT educated, and lateral entrants. Activities include retraining of lateral entrants, regional funding funds, adaptation of teaching packages, and ICT job coaching in SMEs. National projects such as a rebranding campaign and ICT skills passport are implemented regionally.

Zeeland

In Zeeland, the focus is on increasing the number of ICT professionals through four main activities: Spark IT for strengthening IT education in primary and secondary schools; ConnectIT for a community for ICT professionals; ShareIT for image building and recruitment campaigns for start-ups; and GrowIT for customised training, innovative training, and retraining programmes.

5. WHO ARE WE GOING TO DO IT WITH

The Joint Implementation Plan is coordinated by the Human Capital Agenda ICT (HCA ICT) and is implemented together with the central government, industry organisations, provinces, employers, regional initiatives and other public and private parties involved in the HCA ICT. To date, **more than 110 parties** have already contributed to the National Implementation Plan. Most of these organisations are listed below.

Type	Organisatie
Bedrijfsleven	1801
Bedrijfsleven	Adevinta
Bedrijfsleven	Alliander
Bedrijfsleven	Bol.com
Bedrijfsleven	Booking.com
Bedrijfsleven	Capgemini
Bedrijfsleven	CIO platform Nederland
Bedrijfsleven	Considerati
Bedrijfsleven	Cyberveilig Nederland
Bedrijfsleven	Dutch Cloud Community
Bedrijfsleven	Dutch Datacenter Association
Bedrijfsleven	Dutch Digital Agencies
Bedrijfsleven	Dutch Gaming Federation
Bedrijfsleven	FME
Bedrijfsleven	Just Eat Take Away
Bedrijfsleven	Microsoft
Bedrijfsleven	NLdigital
Bedrijfsleven	NRTO
Bedrijfsleven	NS
Bedrijfsleven	Videogames Federatie Nederland
Bedrijfsleven	VNG
Bedrijfsleven	VNO NCW (NL werkt aan werk)
Coalities	AI coalitie
Coalities	Blockchain Coalitie
Coalities	Commit2Data
Coalities	Dcypher
Coalities	Future Netwerk Services
Topsectoren	Human Capital Topsectoren
Topsectoren	Topsector Agri en Food
Topsectoren	Topsector Chemie
Topsectoren	Topsector Creatieve Industrie
Topsectoren	Topsector Energie
Topsectoren	Topsector HTSM
Topsectoren	Topsector ICT
Topsectoren	Topsector Logistiek
Topsectoren	Topsector LSH
Topsectoren	Topsector T&U
Topsectoren	Topsector Water en Maritiem

Type	Organisatie
Onderwijs	MBO raad
Onderwijs	SBB
Onderwijs	Stichting HBO-i
Overheid	Ministerie BZK
Overheid	Ministerie EZK
Overheid	Ministerie J&V
Overheid	Ministerie OCW
Overheid	Ministerie SZW
Overheid	Ministerie van Defensie
Overheid	Ministerie VWS
Overig	Codam
Overig	FutureNL
Overig	Make IT Work
Provincies	Drenthe
Provincies	Friesland
Provincies	Gelderland
Provincies	Groningen
Provincies	Inter-Regionaal Overleg (IPO)
Provincies	Limburg
Provincies	Noord-Brabant
Provincies	Noord-Holland
Provincies	Overijssel
Provincies	Utrecht
Provincies	Zeeland
Provincies	Zuid-Holland
Regionale clusters	Brainport
Regionale clusters	Foodvalley
Regionale clusters	Metropoolregio Amsterdam
Regionale clusters	MRDH
Regionale clusters	Stedendriehoek
Maatsch. organisaties	CNV
Maatsch. organisaties	CNV jongeren
Maatsch. organisaties	Sociaal Economische Raad (SER)
Maatsch. organisaties	TNO
Maatsch. organisaties	UWV

Type	Organisatie
Regionale netwerken	Brainport
Regionale netwerken	Club Caas (Noord Holland Noord)
Regionale netwerken	DGTL District (Flevoland)
Regionale netwerken	Digital District Zwolle
Regionale netwerken	Dutch Innovation Community (ZH)
Regionale netwerken	ICT netwerk Nijmegen
Regionale netwerken	ICT Valley (Foodvalley)
Regionale netwerken	IT Campus Rotterdam
Regionale netwerken	Metropool Regio Amsterdam
Regionale netwerken	MKB Den Haag
Regionale netwerken	MKB Leidschendam-Voorburg
Regionale netwerken	MKB Westland
Regionale netwerken	Netwerkorganisatie IKT (Twente)
Regionale netwerken	Noordelijke Online Ondernemers
Regionale netwerken	Purmervalley
Regionale netwerken	Regionale VNO NCW netwerken
Regionale netwerken	Regitel
Regionale netwerken	Samenwerking Noord
Regionale netwerken	Stedendriehoek regio
Regionale netwerken	Techport
Regionale netwerken	U-Tech (Utrecht)
Regionale netwerken	WE-IT
Regionale netwerken	ZVIO

Type	Organisatie
Regionale initiatieven	CITA
Regionale initiatieven	Co-teach Informatica
Regionale initiatieven	Digital Trust Centres
Regionale initiatieven	IamIT
Regionale initiatieven	IT Hub
Regionale initiatieven	ITVitea
Regionale initiatieven	Media en Innovatiecampus
Regionale initiatieven	MKB Cybercampus
Regionale initiatieven	My Leaves
Regionale initiatieven	Specialized Brain
Regionale initiatieven	Taskforce Diversiteit en Inclusie
Regionale initiatieven	TechMeUp
Regionale initiatieven	Technionista
Regionale initiatieven	Techport
Regionale initiatieven	The Code to Change
Regionale initiatieven	TOP (amsterdam)
Regionale initiatieven	Zwarte vrouwen voor Technologie

6. WHAT IS REQUIRED

Funding

Part of the Joint Implementation Plan will be able to be funded, in cash and in kind, by the stakeholders involved, but additional resources will be needed to fully implement this joint plan. Based on a QuickScan, **an amount of €120-180 million** seems to be **needed for a six-year period**. **The largest funding need** will come from Action Lines B, C and D: **Lateral entry and further development and development of ICT professionals**. Action Lines A can contribute to a lesser extent to the goal of having 1 million ICT professionals by 2030, and are already (partly) covered by adjacent initiatives such as Techkwadraat.

It is expected that most of the funding needs will be for scaling up and coordinating regional activities, and a smaller portion will be needed for the development of national activities. With the removal of the National Growth Fund, a mix of funding sources will most likely be required to successfully implement this plan. Here, we are looking at opportunities after the cabinet formation, European grants such as Digital Europe and also opportunities for smart collaborations with related programmes such as with Techkwadraat, LLO catalyst etc.

National coordination

National coordination is essential for the success of the Joint Implementation Plan. This coordination will be taken up by the HCA ICT in close cooperation with coalitions of stakeholders around key themes. Through central steering and coordination on key themes such as skills and talent-based recruitment, diversity and inclusion in the labour market, and the latest key digital technologies, we will ensure a consistent and efficient approach throughout the Netherlands.

Regional efforts

It is crucial to maintain and further develop strong partnerships between regional governments, educational institutions and the business community to undertake effective and targeted actions. In addition, resources should be made available to continue regional initiatives such as retraining programmes and awareness-raising campaigns. The development of regional action plans aligned with the national framework remains of great importance.

Administrative support

Administrative support is another pillar for the success of the Joint Implementation Plan. There is broad consensus on the need for coordination and direction at both national and regional levels. This means that all relevant stakeholders, including the central government, industry associations, provinces, employers, and other public and private parties, must be and remain involved. This administrative support ensures the necessary support, funding, and joint effort to realise the objectives of the plan.

7. NEXT STEPS

In the period June to September 2024, the plans described in the Heading Document will be further elaborated by relevant stakeholders, both nationally and regionally. In October, the implementation plan will be finalised and presented, after which we intend to start working on the first feasible concrete actions.

June - September

- Maintaining administrative support
- Elaborate actions and Governance
- Further development of regional action plans
- Explore funding opportunities

October

- Joint implementation plan final

November to December

- Implementation of first, feasible actions

