FUTURE SKILLS ORGANISATION
Finance Technology Business

Towards effective ICT training: A needs and gaps analysis of the ICT Training Package

MAY 2025

About Future Skills Organisation

Future Skills Organisation (FSO) is a Jobs and Skills Council (JSC) established by the Australian Government to address critical skills gaps in the finance, technology, and business (FTB) sectors.

FSO aims to fast-track solutions to meet current and future demand for critical skills, ensuring a seamless transition from learning to work.

FSO partners with industry and training providers to co-design innovative solutions that bridge skills gaps and create alternative pathways.

Contents

Executive summary

Future Skills Organisation's mission is to address skills needs across the Finance, Technology and Business sectors.

Vocational Education and Training (VET) must play an increased role in delivering digital skills to keep Australia competitive in the fast-changing global technology landscape.

The technology industry is evolving rapidly, and Australia must address emerging skills shortages to remain competitive in the global economy. Vocational Education and Training (VET) plays a critical role in equipping the workforce with the skills needed to meet these demands. Digital skills are no longer confined to the tech sector, they are essential across every industry and for everyday life.

The insights from this review will guide efforts to strengthen the ICT Training Package and deliver a more impactful VET system for Australia's evolving economy.

This review examined the ICT Training Package and its alignment with other related training packages such as the Business Services (BSB) Training Package to identify gaps and recommend improvements.

While this report is focused on the Information and Communications Technology (ICT) Training Package, it also considers the delivery of digital training across other training packages.

Other training packages within FSO's remit include Financial Services (FNS) and Business Services (BSB). The BSB Training Package includes a range of generalist employability skills applicable to all sectors.

Stakeholders reported that the ICT Training Package is not meeting its full potential. Key concerns include:

- **Misalignment with industry needs.**
- **Barriers to adoption by employers and learners.**
- **Broader issues impacting the VET system.**

Stakeholders emphasised the need for greater flexibility in qualifications and modernised, industry-aligned training.

The recent national VET Qualification Reform introduces greater flexibility to better align training packages with industry needs. This review coincides with significant reforms in the national VET system, including December 2024 decisions by Skills Ministers on Qualification Reform. These changes introduce new flexibility to better align training packages with industry needs. Stakeholders have voiced strong support for these reforms, which align with the feedback gathered during this process.

While modernising the ICT Training Package is essential, broader reforms are also required to address key skills gaps and enhance agility. Recommendations will focus on:

- Creating a more responsive ICT Training Package to reflect current and future skills demands.
- Leveraging national VET system reforms to address flexibility and systemic barriers.
- Ensuring the ICT Training Package supports both tech industry roles and broader workforce digital skills.

This review involved extensive consultations with stakeholders across all states and territories.

FSO listened to our stakeholders:

We engaged with TAFEs, private and community Registered Training Organisations (RTOs), universities, schools, peak industry bodies, and priority cohorts such as First Nations people, women, and people with disability. We also collaborated with State and Territory Training Authorities (STAs), curriculum authorities, other Jobs and Skills Councils (JSCs), and employers.

Defining purpose and pathways

- There is a need to provide clarity on the purpose of the ICT Training Package.
- Clear education, training, and employment pathways into and from the ICT Training Package need to be defined.
- The ICT Training Package needs to support lifelong learning and flexible entry and exit points by providing stackable training products which lead to qualifications recognised by the VET system and industry.
- Stakeholders would benefit from a common language to describe digital skills and underpin training package design.

Aligning with industry and technology needs

- Industry engagement and input is needed to inform the ICT Training Package to ensure that it is relevant and responsive.
- ICT training products can become outdated quickly given the speed of technology change. Updates to the training package haven't kept pace.
- ICT training products need to get to market faster to keep pace with industry changes and emerging technologies.
- Urgent emerging skills needs – cyber security (generalist and specialist) and AI (generalist and specialist) are not adequately covered in the ICT Training Package.
- An uplift in digital capability skills is an urgent need across the economy, impacting multiple industries.
- Accredited training needs to better recognise in-demand industry and vendor certifications.

Strengthening workforce and delivery capability

- There is a lack of workplace readiness among graduates.
- Developing new teaching and learning programs cost training providers, and the administrative requirements of implementing new training products can be prohibitive.
- Greater industry participation is required to support VET workforce challenges, including:
  - shortages of qualified ICT teachers/trainers, and
  - maintaining industry currency of skills, particularly in emerging and changing technologies.

FSO would like to thank all stakeholders who participated in the needs and gaps analysis process. The momentum and partnerships formed will underpin the co-design of the ICT Training Package, through the ICT Training Package Update.

Drawing from stakeholder insights, data analysis, and a thorough literature review, we identified five key focus areas that represent our priorities for establishing a robust and dynamic ICT Training Package.

These focus areas are interconnected and supported by recommendations, each outlining the specific actions needed to deliver an ICT Training Package that will respond to the challenges and issues that stakeholders have raised. These recommendations will be further considered through the ICT Training Package Update process.

Recommendations fall into two categories:

- **ICT Training Package recommendations** which cover what we can do now within the existing training package.
- **System innovation recommendations** which speak to how the system can improve.

The five focus areas are outlined on the following pages.

Focus area 1

Defined Purpose

Articulate a clear and compelling purpose for the ICT Training Package.

Defining a clear purpose will provide a strategic direction upon which content decision can be made, enhances stakeholder understanding and demonstrates the value it can provide.
To support this, key recommendations include:

- Defining the purpose of the ICT Training Package as providing technical and specialist skills for careers in the technology industry and technology roles in other industry contexts.
- Moving training products related to general digital capability skills out of the ICT Training Package and into the BSB Training Package.
- Consulting with stakeholders through the ICT Training Package Update process to consider the benefits of creating a standalone telecommunications training package.

Focus area 2

Relevant and Responsive

Update the ICT Training Package to reflect industry trends and emerging technologies.

Industry wants the training package to support the development of job-ready graduates, and learners want their skills recognised by employers. To achieve this, we recommend several key recommendations, including:

- Engaging industry to co-design ICT training products, ensuring they remain relevant and aligned with current job market demands.
- Designing the content and structure of the ICT Training Package to align with entry-level pathways.
- Prioritising urgent skills needs in AI, cyber security, and generalist digital capability.
- Piloting a new Training Product Trial process to address the most critical skills needs faster.

Focus area 3

Clear and Accessible

Learner needs must be central, including priority groups.

A clear and accessible training package allows learners to understand and engage with the content and is more likely to be implemented and delivered effectively by RTOs.
Key recommendations include:

- Recognising the Digital Competence Framework for Citizens (DigComp) and the Skills Framework for the Information Age (SFIA) as the frameworks for developing training products, providing a common language to help learners and employers recognise connections between skills and application to a range of roles and tasks.
- Enhancing the Companion Volume Implementation Guide (CVIG) as a targeted resource to help training providers, learners, and employers understand how training aligns with workplace needs.
- Prioritising identification and promotion of entry-level pathways through the ICT Training Package, to raise awareness for learners, career changers and career advisors.
- Designing training products that encourage the application of Universal Design for Learning by training providers.
- Including diverse stakeholders in consultations on draft content with a focus on accessible and flexible learner-centred design.

Focus area 4

Deliverable and Updatable

Developing a flexible approach that allows for regular updates and improvements is critical to ensure relevance for industry requirements.

Ensuring RTOs have the resources and support for effective implementation is also important. To address this focus area, our recommendations include:

- Designing new training products in alignment with recent Qualification Reform decisions, supporting clearer and more streamlined training products, making it easier to develop, administer and deliver courses.
- Prioritising input from training providers to understand the implementation implications of updates, ensuring that ongoing delivery remains commercially viable.
- Providing guidance to the VET workforce for implementing new and updated skills and knowledge in the ICT Training Package.
- Establishing and communicating a regular review cycle for ICT Training Package updates.

At the system level, we recommend:

- Exploring opportunities to support the establishment of, and collaboration with, a Digital Centre of Excellence to promote best practices and share resources.
- Supporting VET workforce industry-led initiatives for attraction, retention, and industry cooperation through FSO's VET Workforce Activity.
- Advocating for incentives to help industry meet Training and Education (TAE) Training Package requirements for ICT trainers, ensuring effective delivery.

Focus area 5

Supportive of Flexible Pathways

The training package must cater to diverse learner needs and career aspirations.

Learners should have flexible entry and exit options to support work and life, and have their prior skills and experience recognised within the ICT Training Package. Key reforms we recommend are:

- Restructuring the ICT Training Package to align with Qualification Reform decisions, making it 'modular and stackable'. This approach enables learners to study UoCs and skill sets individually and sequentially, fostering lifelong learning and upskilling.
- Exploring the feasibility of including a flexible, generic skill set to:
  - Enable the introduction of new and emerging technologies
  - Prepare learners with the skills and knowledge needed for industry certification exams
  - Support easier Recognition of Prior Learning (RPL) from industry certifications.
- Advocating for funding models that support stackable qualifications, with optional exit points aligned to priority skills and lifelong learning pathways.

NEXT STEPS

These recommendations will be a key input into the ICT Training Package Update, to commence in 2025.

For some recommendations, additional consultation is required to ensure that what is proposed is workable and will meet the needs of all stakeholders. The update will provide for national consultation and refinement of ideas to get this right.

This report also provides support for other priority work FSO has underway, which will inform training package design. This includes our work around:

- entry-level pathways into the tech sector
- supporting digital capability uplift across the economy
- responding to urgent needs for generative AI and cyber security; and
- moving toward a common language for digital skills.

This work will continue to be progressed and provided to support the upcoming ICT Training Package development process.

FSO, as stewards of the ICT Training Package, will continue to listen to our stakeholders and respond with improvements and innovations to ensure that we develop a training package which better meets the needs of industry and learners. FSO is grateful for the invaluable contribution of our stakeholders in this process.

The following report delves into each focus area, the findings that underpin them, and the recommendations tied to each.

The growing need for digital skills

Digital technologies are emerging and evolving at an unprecedented speed. Emerging technologies such as artificial intelligence (AI), cloud computing and the Internet of Things (IoT) are transforming how businesses operate, and individuals interact with technology.

This rapid advancement means that tools, platforms and methodologies are constantly changing, making it essential for individuals and organisations to continuously stay ahead of the curve and remain competitive[1]. Six out of 10 people working in tech occupations are employed outside the tech industry, meaning that training needs to be adaptable and flexible for different industries and contexts[2].

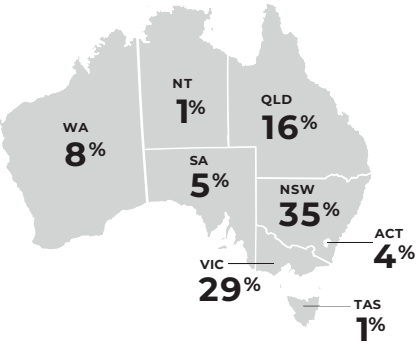
The use and integration of current and emerging technologies can lead to increased efficiency, improved customer experience and support the adoption of new business models. However, this also means that the skills required to navigate and leverage these technologies are continually changing.

To keep pace with the fast-changing landscape and remain competitive in the global economy, Australia needs to respond to evolving industry demands and address skills shortages. Australia needs to develop a workforce which is agile, adaptive and skilled in emerging technologies.

The national skills system also needs to evolve and grow to provide workforce skills. The system needs to embed continuous learning and development opportunities to ensure Australia's workforce has the skills to effectively use the latest technology and demonstrate the best workplace practices. This would boost productivity and encourage more innovation in our organisations and industries.

Technology occupation employment totals, within and outside the direct technology sector[5].

WA	61,286
NT	5,032
QLD	117,746
SA	40,733
NSW	256,206
ACT	32,840
VIC	218,313
TAS	9,677



ICT is the 3rd biggest industry in Australia, contributing $167bn to Australia's GDP[3].

There are projected workforce shortages, including 85,000 digital workers needed in NSW by 2030[4].

1. Digital Skills Organisation (DSO) (2023) *Growing Australia's digital workforce.*
2. Australian Computer Society (ACS) (2023) *Australia's Digital Pulse Report.*
3. Tech Council of Australia (2021) *The economic contribution of Australia's tech sector*, Tech Council of Australia.
4. NSW leads the way in tackling digital skills shortage | NSW Government
5. Map data uses Labour Force Survey data and is proportioned by state/ territory using historical ABS census 2021 state splits

Snapshot of the direct technology sector in Australia[6]

338,277
Total number of people employed in technology sector

2.7%
of the total national workforce (2021)

$1,630
Median weekly earnings per week (gross)

7.4%
Projected growth by 2028

15.7%
of the technology workforce work part-time

30.7%
of the technology workforce are women

<1% of the technology workforce with disability

<1% of the technology workforce identify as First Nations

of the technology workforce is linguistically diverse

Of the technology workforce:

40 is the median worker age

6.2%
are aged between **15-24**

13.7%
are aged **55 or above**

18.5%
have a **VET** qualification as their highest qualification

63.9%
have a **university** qualification as their highest level of qualification

6 FSO (2024) *Technology Industry Workforce Plan 2024*, FSO.

Context of this report

The national VET system provides practical, role-oriented training across a wide range of industries. It aims to equip learners and workers with the skills and knowledge needed for various occupations.

Training packages specify the skills and knowledge required to perform effectively in the workplace, expressed in units of competency (UoCs), skill sets and qualifications. **Training packages are nationally recognised and used by RTOs to design and deliver training that meet the needs of learners and employers.** They also assist employers with workforce design and development.

The ICT Training Package contains nationally recognised UoCs, skill sets and qualifications to support the tech industry in Australia, with a focus on communications technology and information technology. Its purpose is to ensure that workers can competently perform their job roles, while also equipping workers in other industries with essential IT and digital skills. For example, the ICT Training Package UoCs are currently used in 15 other training packages across all nine other JSCs. The BSB Training Package also includes UoCs to support digital capability skills across the economy.

Stakeholder feedback is clear that things need to be done differently, and that the training system must be pushed to better meet the needs of industry and learners. This review has been conducted during a period of significant reform for the national VET system, including recent decisions from Skills Ministers in December 2024 in relation to Qualification Reform. This reform provides new flexibility in the design of qualifications to meet different industry needs. These changes are welcome and align with what our stakeholders have told us is needed through this process.

Proposed changes

In response to this, FSO have undertaken a comprehensive review to identify the current gaps in the ICT Training Package and determine what is needed to enhance its effectiveness.

This review had a deliberate focus on the ICT Training Package; however, some of the issues raised go beyond the ICT Training Package and relate, in whole or part, to system issues. This report aims to outline what we can do through the upcoming training package update process, while also advocating for changes that will help make the national VET system more responsive to the needs of the tech industry and learners.

This review specifically considers the five Information Technology qualifications contained within the ICT Training Package and does not consider telecommunications qualifications, which are being reviewed as part of a future update.

As part of this review, we considered the following:

- Alignment of the ICT Training Package with current and future career pathways, job roles, and skill profiles in the ICT industry.
- Reflection of current and emerging technologies, such as cyber security and generative artificial intelligence (Gen AI), in the ICT Training Package.
- Identification of gaps and/or enhancements that may require minor or major changes in training package products.
- Identification of under-used products and the reasons for their low uptake.
- Identification of barriers to the use of the ICT Training Package by RTOs, employers and learners.

The ICT Training Package currently covers[7]:

650
UoCs

108
skill sets

11
AQF aligned qualifications

The last significant update to the training package was in 2020, which involved structural changes including:

- A reduction in the number of qualifications to simplify the structure and reduce overlap.
- Introduction of specialisations to allow for greater flexibility and contextualisation within each of the 11 simplified qualifications.
- New specialisations introduced within fewer, broader, qualifications to cover the range of skills previously addressed by separate qualifications.

The industry sectors covered by the ICT Training Package include:

- Communications technology
- Information technology
- Networking
- Digital media
- Administration
- Cross-sector
- Industry capability.

7 ICT Information and Communications Technology Training Package Companion Volume Implementation Guide (Version 9.0)

Methodology

Stakeholder engagement, data analysis and literature review

Extensive stakeholder engagement was undertaken to understand the challenges, barriers, needs and gaps relating to the current ICT Training Package. Consultation also aimed to identify the actions required to make the ICT Training Package a more attractive option for employers and learners.

Stakeholders across all states and territories were engaged through face-to-face workshops, virtual workshops, surveys, and individual consultations. A diverse group of stakeholders were also engaged through FSO State Forums and FSO Taskforces.

The process sought the perspectives of TAFEs, private and community RTOs, schools, universities, industry peak bodies and associations, priority cohorts (First Nations people, women, people with disability, people with low foundation skills), State Training Authorities (STAs) and curriculum authorities, Jobs and Skills Councils and employers.

Stakeholder feedback and insights, supported by extensive data analysis and research, were tested against insights from consultations carried out as part of FSO's 2024 Workforce Plan.

This robust approach has allowed us to develop an extensive evidence base from which we could draw findings and co-design recommendations.

A literature review drew on the most up-to-date research and was one element of this needs and gaps analysis. The literature review aimed to provide additional information on three critical areas:

- **Current and future skill requirements**
- **Trends, best practices and educational innovations**
- **Framework for skills and pathways**

Further reading to support the methodology

Appendix A. List of participating stakeholders

ICT Training Package recent trends

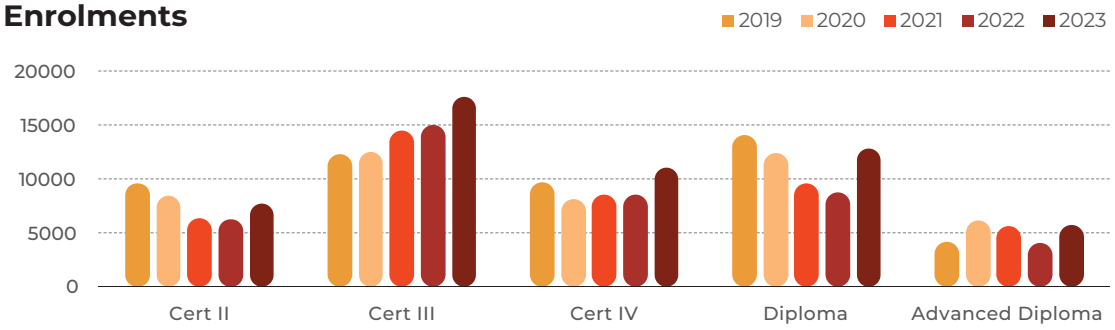
Enrolment and completion trends

The picture around enrolments and completions across the ICT Training Package is mixed.

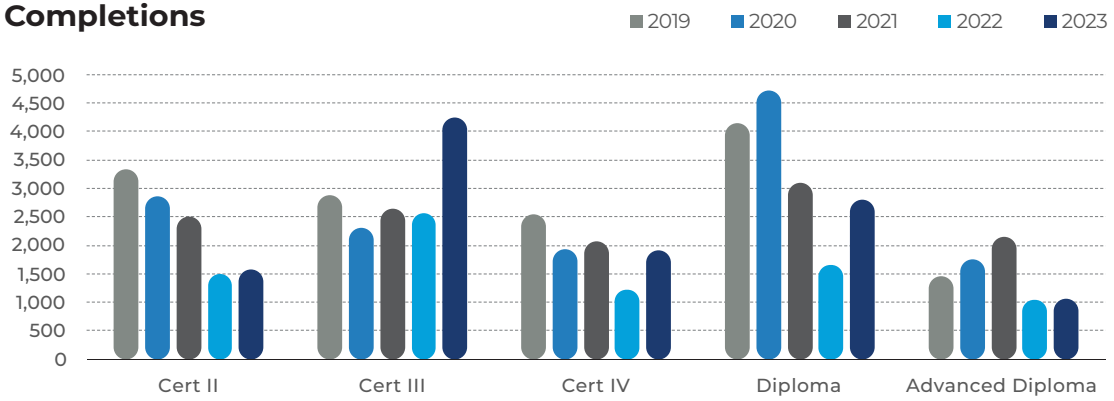
Looking at non-telecommunications qualifications (right), there is a slight decline in enrolments[8] between 2019 and 2023 for Certificate II in Applied Digital Technologies and Diploma of Information Technology. Certificate III in Information Technology qualification is the only qualification with a consistent upward trend between 2019 and 2023. Completion numbers are lower across four of the five qualifications in 2023 when compared to 2019[9].

During this period, there were significant shortages of ICT professionals. In 2023 alone, 69% of ICT professional occupations were in shortage[10]. There are currently national skills shortages for engineers, software testers, developer programmers and a range of cyber-related occupations[11]. What is clear is that significant demand from industry has not translated into growth in enrolments and completions.

Enrolments



Completions



8 NCVER 2024, Total VET students and courses 2023: program enrolments DataBuilder
9 NCVER 2024, Total VET students and courses 2023: program completions DataBuilder
Note 8 & 9: Excludes all telecommunications qualifications. Excludes Cert I qualification data as no longer delivered
10 Jobs and Skills Australia (2023) *Skills Priority List Key Findings Report 2023* | *Jobs and Skills Australia*
11 Occupation Shortage List | Jobs and Skills Australia

Vision for the ICT Training Package – focus areas for improvement

The findings of this review have led to the development of five key focus areas. These areas represent priorities for action to establish a robust and dynamic ICT Training Package.

The focus areas are interconnected and are underpinned by recommendations.

The five focus areas are:

- **Defined Purpose**
- **Relevant and Responsive**
- **Clear and Accessible**
- **Deliverable and Updatable**
- **Supportive of Flexible Pathways**

Recommendations fall into two categories:

- **ICT Training Package recommendations** cover what we can do now within the existing training package
- **System recommendations** which speak to how the system can improve

The ICT Training Package Update will commence in 2025 and is expected to be completed by 2027. FSO, as stewards of the ICT Training Package, will continue to work closely to support that process.

1. Defined Purpose

The first priority is to articulate a clear and compelling purpose for the ICT Training Package. Defining a clear purpose provides strategic direction upon which content decisions can be made as part of the training product development process. It also supports stakeholders' understanding of what the ICT Training Package aims to achieve.

2. Relevant and Responsive

To respond to the pace of change, the ICT Training Package must be updated to reflect current industry trends and emerging technologies. Industry wants the ICT Training Package to develop job-ready graduates and learners want their skills recognised by employers.

3. Clear and Accessible

Learner needs must be central, including priority groups. A clear and accessible training package allows learners to understand and engage, and simplifies delivery for RTOs.

4. Deliverable and Updatable

Developing a flexible approach that allows for regular updates and improvements is critical to ensure relevance for industry requirements. Ensuring RTOs are equipped with the resources and support to implement these updates seamlessly is also important.

5. Supportive of Flexible Pathways

The training package must cater to diverse learner needs and career aspirations. Learners must be able to move in and out of learning as needed to support life and work, including recognition of skills and experience gained outside of the ICT Training Package.

Each focus area and related recommendations are explored in the following chapters of this report.

FOCUS AREA 1

The need for training with a **Defined Purpose**

Stakeholders consistently reiterated the need for the ICT Training Package to have a clearly defined purpose, linked to ICT workforce and industry needs. Defining a clear purpose provides strategic direction upon which content decisions can be made as part of the training product development process. It also supports stakeholders' understanding of what the ICT Training Package aims to achieve.

This study has found that the ICT Training Package would benefit from establishing its own distinct identity, relative to other training packages (Business Services, for example), and relative to vendor certifications and other non-accredited training offerings. It is also important that ICT qualifications and skill sets have a clear purpose relative to one another.

By defining a clear and compelling purpose for the ICT Training Package, it ensures that training addresses specific and required skills gaps, and meets the needs of learners, training providers and industry.

FOCUS AREA 1

What we heard from our stakeholders

Stakeholders confirmed their support for accredited training, but want:

- A better understanding of the value of nationally accredited training to support the tech industry, supported by:
  - Clarity on the purpose of the ICT Training Package.
  - Clear education, training and employment pathways into and from the ICT Training Package.
- Clarity for learners and employers about the role that VET plays in skill development as part of the education and training system alongside the school system and higher education.
- The ICT Training Package to offer clear pathways for initial and lifelong learning to support careers in technology (in digital or other industries).
- Greater clarity on the treatment of general digital capability skills (needed for pathways into all careers and occupations) where there is currently a significant overlap with the BSB Training Package.
- Consideration of the distinct nature of Telecommunications Qualifications and implications for ensuring a clear purpose for the ICT Training Package.

"I'm not sure about the purpose. It's too vague."

RTO workshop participant

FOCUS AREA 1

Defining a purpose for the ICT Training Package is critical

Through consultation, stakeholders expressed support for the national training system but reported that the current version of the ICT Training Package is not adequately meeting the skills needs of industry. Stakeholders want a clearly defined purpose for the ICT Training Package to help ensure it can be designed to effectively meet its purpose.

A challenge in defining a clear purpose for the ICT Training Package is that digital skills are now needed right across the economy. A study conducted by the Digital Skills Organisation (precursor organisation to FSO) found that all workers require some digital skills and that by 2026, 1.3 million workers will need to be digital experts[12].

While demand for digital skills is growing, there isn't a clear pattern of increased enrolment across ICT qualifications.

Over time, more UoCs and skill sets have been added to the ICT Training Package to address the increasingly complex technological landscape and to support the needs of all workers. This has created confusion among industry and learners about the training package's practical purpose and relevance to job pathways.

While more has been included in the ICT Training Package, feedback from stakeholders is that technical skills, including those needed for emerging technologies, have not been addressed appropriately.

To provide greater clarity to industry and learners, FSO recommends defining the core purpose of the training package to focus on:

- technical and specialist skills required for the tech industry and technology roles in other industry contexts, and
- core technology skills as a pathway into specialisations.

To meet the future needs of industry and learners, qualifications within the ICT Training Package need to address essential enabling skills – such as critical thinking, innovation and problem-solving. These are core skills that learners need to respond to a changing landscape, and which can be applied in the use of different technologies.

The ICT Training Package must also support lifelong learning, which is examined in further detail in this report.

12 Digital Skills Organisation (DSO) (2023) *Growing Australia's digital workforce.*

There is a need to clarify the ICT Training Package in relation to other training packages

Through clarifying the role and purpose of the ICT Training Package, there is then a need to consider how it relates to other packages, in particular the BSB Training Package.

Stakeholders highlighted that there are significant overlaps between the ICT Training Package and the BSB Training Package. The BSB Training Package is primarily used for enterprise and enabling skills, and its purpose is generally well understood by industry and learners. UoCs from the BSB Training Package are widely imported into other training packages.

FSO recommends that training products that support digital capability skills across all industries sit within the BSB Training Package. These can then be imported into the ICT Training Package and other training packages as required.

Defining the purpose of the ICT Training Package to support skills and pathways into IT jobs also has potential implications for telecommunications qualifications.

Telecommunications qualifications are very distinct when compared to other tech-focused qualifications. For example, there is a more direct relationship between telecommunications qualifications and job roles. For IT roles, this relationship has been harder to define.

Telecommunications qualifications are generally trade-based and clearly linked to apprenticeship pathways and awards. Telecommunications is also a regulated industry with a range of regulatory requirements attached to training package products.

One issue which should be closely considered through the ICT Training Package Update is whether the inclusion of telecommunications qualifications within the ICT Training Package contributes to stakeholder confusion about the purpose and outcomes of the ICT Training Package. The distinct nature of telecommunications qualifications may suggest that a separate training package would be beneficial.

This approach has the potential to give both sectors ownership of their own training package that is solely designed to meet their specific needs. This is an idea which would require detailed stakeholder consultation and consideration.

> “It really comes down to creating awareness pieces around the ICT Training Package rather than trying to tell people that it’s so great...”
>
> Industry stakeholder

Increasing understanding of the value of nationally accredited VET training

Consultation for FSO's 2024 Workforce Plan highlighted a growing preference for higher education over VET, particularly for the tech industry. This is affecting learner decisions, industry perceptions, and the overall reputation of VET institutions in this industry.

Within the tech sector, there is a preference for higher education qualifications. Only 18.5% of the tech sector workforce has a VET qualification as their highest qualification[13]. Our consultation suggests that this may be because learners and industry do not fully understand the benefits of VET and the role that the ICT Training Package can play in supporting their career and workforce development.

Stakeholders suggested the need to change the perception of VET and to promote the role that VET can play in skill development as part of the overall education and training system, alongside school and higher education.

Stakeholders highlighted the following key strengths of VET, which need to be better communicated to establish a greater appreciation of the value of nationally accredited training and the ICT Training Package:

- practical, hands-on, project-based training
- alignment with industry (when co-designed)
- nationally regulated and quality training
- developed competencies and skills that match those needed in industry and jobs
- integrates both vocational skills and broader competencies such as critical thinking and social skills
- supports early entry into vocational training
- shorter duration than higher education
- cost-effective.

"We need to make sure that not everybody thinks that you need to have an Honours or a Masters degree to get into the IT industry, because that's not the case."

RTO stakeholder

13 FSO (2024) *Technology Industry Workforce Plan 2024*, FSO.

Recommendations for achieving a defined purpose

ICT Training Package recommendations

1. **The ICT Training Package purpose should provide:**

- technical and specialist skills required for jobs and careers in the tech industry and technology roles in other industry contexts
- core technology skills and critical skills, such as problem solving and teamwork, as a pathway into specialisations
- theoretical knowledge and practical skills with industry application
- entry and exit points to support lifelong learning.

2. **Communicate the role and value of VET to support ICT skills development** alongside, and complementary to, other parts of the education and training sector (e.g., schools, higher education).

3. **Communicate the purpose of the ICT Training Package to employers and learners,** illustrating how the outcomes of training align with skills needs.

System recommendation

4. **Clarify the purpose of the ICT Training Package by:**

- moving digital capability training products to the BSB Training Package where they will be more accessible
- consulting with stakeholders through the ICT Training Package Update process to consider the benefits of creating a standalone training package for telecommunications training products.

FOCUS AREA 2

A training package that is **Relevant and Responsive**

Industry wants the ICT Training Package to produce job-ready graduates, and learners want skills developed through training to be recognised by employers. Stakeholders report that this is not currently happening.

Relevancy and responsiveness of VET is an ongoing issue, particularly for quickly evolving industries. There are constraints on the ability of the national VET system to move quickly, and FSO will continue to work with the Australian Government and state and territory governments on broader reforms to the system.

Creating a relevant and responsive training package will rely on understanding industry needs, being proactive rather than reactive, addressing emerging industry trends and technologies, and ensuring carefully considered skill-development pathways are embedded to meet these needs.

Qualifications must be relevant to the current and emerging skills needs of employers and linked to job requirements.

FOCUS AREA 2

What we heard from our stakeholders

- There is a lack of workplace readiness among graduates.
- Skills are frequently changing, and the ICT Training Package needs to deliver skills in demand aligned with job families/roles.
- Industry engagement and input is needed to inform the ICT Training Package to ensure it is relevant and responsive.
- The ICT Training Package needs to incorporate emerging technologies.
- Partnerships between employers and RTOs to deliver industry-relevant skills are valued, but hard to sustain in practice.
- There are urgent emerging skills needs; in particular, cyber security (generalist and specialist) and AI (generalist and specialist) are not adequately covered in the ICT Training Package.
- An uplift in digital capability skills is an urgent need across the economy, impacting multiple industries.
- ICT training products need to get to market faster to keep pace with industry changes and emerging technologies.

The ICT Training Package needs to be better aligned with industry needs

New technologies are rapidly changing the way organisations operate. This is driving an evolution in the types of skills required across the economy. The national training system needs to respond to keep pace; however, stakeholders have told us that the ICT Training Package is 'falling behind' in providing relevant training.

Stakeholders pointed to a misalignment between the skills learners are developing in training and the skills employers need. Qualifications are not being seen as relevant to the current and emerging skills needs of employers or linked to job requirements.

Only 7% of the ICT Training Package qualification completers were employed in the same occupation as their qualification[14], suggesting the ICT Training Package is not being used to provide the skills needed for the tech industry. Only half of learners found their ICT training relevant to their current job[14] which also suggests it is not supporting cross-industry needs.

The misalignment of the ICT Training Package and industry needs is likely impacting learners' post-training employment prospects leading to industry continuing to disengage from nationally accredited training. Stakeholders report that industry certifications are more valued than VET qualifications due to the alignment of industry certifications with industry needs. Industry certifications will continue to play a role in the education and training landscape, providing flexibility to employers and a reference point for emerging industry skills.

Stakeholders report that there are critical industry skills needed in areas like AI and cyber security, as well as data analytics, cloud computing, and IoT. Targeted training is needed at all levels to better match industry requirements.

To ensure that training content remains up to date with emerging technologies and industry practices, stakeholders say it is important to establish deep engagement between industry representatives and the national training system architecture. JSCs were specifically established to provide this voice to industry and bring this engagement to training package development processes.

14 Total VET student outcomes 2016-2022, NCVER VOCSTATS

FOCUS AREA 2

Entry-level pathways need to be defined

The tech industry is different to other industries, including due to the pace of change in job roles. While a direct relationship between a qualification and a job role is possible for some industries, it is problematic for the tech industry. Tech jobs are constantly changing, so it is difficult to design training that meets industry needs.

FSO has been piloting an approach to defining entry-level pathways for the tech industry. Rather than defining the knowledge, skills, and attributes for a specific job, entry-level pathways will capture the related knowledge, skills, and experience across a number of related entry-level job roles.

FSO is working to firstly define the pathways, and then articulate industry needs in terms of knowledge, skills, and attributes. What is captured will be tested with industry to ensure that it resonates with what industry is looking for. By understanding industry needs for each entry-level pathway, the training package can then be deliberately built to prepare learners with the knowledge, skills, and attributes they need.

Industry engagement will be critical to articulate a shared understanding of the skills, knowledge, and attributes required by entry-level workers.

Entry-level pathways will provide a foundation for the ICT Training Package; beyond that, the ICT Training Package can also build further upskilling and specialisation pathways.

> "And we know what students expect from a course...they expect that it's going to be either part of a pathway or it's actually going to lead them into employment."
>
> RTO Stakeholder

FOCUS AREA 2

Urgent skills must be identified and addressed

A key element supporting this 'Relevant and Responsive' focus area is prioritising skills where there is the greatest unmet workforce demand. Industry stakeholders are at the forefront of new technology adoption and are best placed to identify the skills that workers need to adapt and thrive. By leveraging these insights, training product development can be strategically directed to meet urgent needs and future demands.

Consultation found there are urgent skills gaps, especially in cyber security and AI (for both generalist and specialist roles), as well as transferable digital skills across a range of job roles and industries (digital capability).

Stakeholders report that an uplift in digital capability skills is urgently required across the economy, with research conducted by Australian Industry Group finding that skills shortages are the greatest barrier to technology uptake[15]. Stakeholders report that digital capability skill development should be addressed as a priority as early as possible in education. Given the broad cross-industry need for digital capability, as discussed in the 'Defined Purpose' focus area, it is recommended that new or updated training products for digital capability be developed as an update to the BSB Training Package.

While general stakeholder sentiment is that the ICT Training Package does not adequately address current urgent skill areas, stakeholders believe the ICT Training Package can be updated to effectively provide the skills needed by learners and employers.

> "Across the board, like the whole tech sector, ICT is in a skill shortage...cyber security is probably the most crucial one at the moment because of what's happening within industry."
>
> Industry Skills Advisor

15 Australian Industry Group (AIG) (2024) *Technology Adoption in Australian Industry.*

Industry should be integrated into delivery of training and assessment

Stakeholders were clear that FSO need to work closely with industry to ensure the ICT Training Package is relevant and responsive. Involving industry in the design of training resources, delivery, and assessment is best practice and is crucial for creating relevant and responsive training programs. This also improves the VET system's effectiveness as it relates to the delivery of current tech and digital skills.

A traditional strength of the VET system is its ability to provide hands-on skills through apprenticeships, traineeships, internships, and vocational-focused learning. Industry engagement in learning allows industry to work with formal training to shape skills, ensuring real-world IT challenges are included alongside best practice teaching and learning approaches, like project-based learning.

There is an appetite to *'treat ICT skills akin to a trade'* in the modern learning environment to assist in meeting employers' expectations of graduates.

Stakeholders expressed that it's important for industry stakeholders and RTOs to build stronger and more effective relationships and co-delivery approaches, but that is hard to sustain in practice.

Stakeholders suggested many ways to strengthen collaboration and integration between RTOs and industry. For example:

- Collaborations between RTOs and employers to enable learners to work on real-world projects.
- Industry equipment and technology sponsorship, hosting of training hubs, delivery on-site.
- Industry internships and/or mentorships for learners.
- Job placements or secondments for trainers.
- Industry curriculum co-development.

Many of these initiatives occur now but can be hard to sustain without dedicated support, limiting scale across the training system. Challenges associated with these approaches, as expressed by stakeholders, include time and money for RTOs to build long-term industry partnerships, difficulty achieving buy-in from employers, and a lack of resources (such as dedicated staff to support the process).

When industry-integrated delivery is not possible, stakeholders advised there are benefits from working with industry to develop real-world project-based learning or simulated workplace environments to provide learners with more tangible skills.

As part of the JSC-led VET Workforce project, FSO is gathering further stakeholder feedback on the challenges to greater industry participation and are exploring ways to increase industry engagement in the delivery of training and assessment.

> "Strong emphasis should be placed on hands-on experience and the use of pertinent tools [to] greatly enhance its practical value."
>
> RTO Stakeholder

Training products need to be brought to market faster

Two key elements to effective training are:

- ensure the ICT Training Package addresses the right skills
- ensure products can get to market quickly enough to be current.

Stakeholders expressed that ICT training products need to be updated quickly to keep pace with change. Without this, the risk is that graduates may be left with outdated skills.

Slow speed to market contributes to the poor perception of VET qualifications, as many employers feel the skills gained are not relevant, making graduates less desirable. Given stakeholder comments that *'ICT can change in months, not years'*, the slow and inflexible process of updating the ICT Training Package is resulting in outdated content, which further impacts industry's engagement in VET.

There is a need for prioritising speed, where possible, within the mandated Training Package Organising Framework (TPOF) process. For the most urgent areas identified by industry, FSO will trial an approach in parallel with the TPOF to get products to market quicker (Training Product Trial).

The Training Product Trial will include:

- delivery of draft training products (UoCs and/or skills sets).
- development of learning and assessment resources in conjunction with RTO delivery partners, based on the draft training products developed through TPOF processes.
- delivery of training to specific cohorts of learners, through RTO delivery partners while accreditation processes are completed.
- evaluation by an independent evaluator.

The trial will start small and focus on those skills that stakeholders report are most urgent across a range of industries: digital capability, AI generalist skills and cyber security generalist skills.

Case study

Cracking the code for industry collaboration: How NextEd Group Limited is integrating industry for learner success

NextEd Group, Steven Hiotis (Partnerships Coordinator), Laurien Duits (Partnerships Manager)

NextEd Group Limited has developed a framework for learner success, and it involves integrating industry participation right from the start of each student's learning journey.

The group's Academy of Interactive Technology (AIT) and its brand Coder Academy both offer vocational and higher education qualifications and have developed industry partnerships to support relevant and responsive training.

Through industry partnerships and collaborations with organisations including Unreal Engine and South by Southwest, learners are regularly given opportunities to build industry knowledge and connections.

This includes 'Master Talks' for all learners featuring industry leaders sharing experiences and advice, opportunities to volunteer at events and conferences, local meetups and networking events and involvement of industry panels in key projects.

Partnerships Coordinator Steven Hiotis says these initiatives help learners to learn about current industry trends and gain networking and communication skills.

"All these opportunities build their confidence to be able to strike up a conversation and share their ideas," he says.

These skills are helpful when it comes to securing and attending work placements or internships.

"If you've got really confident creatives and developers who are happy to talk to anyone about their work, it becomes much easier to find opportunities," Steven explains.

"If you've got really confident creatives and developers who are happy to talk to anyone about their work, it becomes much easier to find opportunities"

Steven Hiotis, NextEd Group Ltd

Laurien Duits, Partnerships Manager, says there can be challenges in building and maintaining industry partnerships, such as finding organisations with the resources to spend time with learners.

She says work placement is vital to help learners stand out in the competitive tech job market and gain a foot in the door.

"Industry placement is often the number one reason learners sign up for our course," she says.

"They can add to their resume that they built something and were exposed to an organisation's code base and stack, which is invaluable."

Ultimately, Laurien says after completing placements, learners report they learnt more than they expected and gained valuable insights into their new career.

"The important thing is that we teach them how to learn and this allows them to pick that up and get the ball rolling."

Recommendations to become more Relevant and Responsive

ICT Training Package recommendations

1. **Engage industry to co-design ICT training products** to ensure relevance and alignment with current job market demands.

2. Consider ways to **increase collaboration between RTOs and industry**.

3. Design content and structure of the **ICT Training Package to be aligned and responsive to entry-level pathways.**

4. **Respond to urgent skills** needs by prioritising training product development to support AI and cyber security, and digital capability.

5. **Pilot the Training Product Trial process** to address the most critical skills needs quickly, with an initial focus on digital capability, AI generalist skills and cyber security generalist skills.

FOCUS AREA 3

A training package that is **Clear and Accessible**

Putting the needs of learners at the heart of training is a core element of Qualification Reform efforts.

Training packages should be clear, easy to understand, and focused on the needs of learners. This means that learners from different backgrounds can engage with the content and what it means for them. Learners should be able to clearly understand what the ICT Training Package offers, and the career paths it can open.

> "Diversity remains a challenge, so thought should be given to more targeted pathways from early education through to encouraging mature age people back into work."
>
> State government stakeholder

What we heard from our stakeholders

- Employers, learners and potential learners would benefit from a common language to describe generalist and specialist digital skills, and how they link to training product outcomes.
- Types of roles and opportunities in the technology industry are not always well-known. Pathways from training into ICT jobs (within and external to the tech industry) are not always clear.
- School students need access to better information on job roles and career options in the tech industry, and the education and training pathways that can get them there.
- Training product design must enable accessibility for a diversity of learners to increase the diversity of the technology workforce.
- Industry wants to address diversity.
- There is a clear need to support attraction, retention and support for priority cohorts.

"Mapping and alignment of training and certifications to industry requirements can help individuals create a comprehensive career plan by identifying relevant qualifications and specialist skills."

RTO stakeholder

There is a need for a common language

Feedback from stakeholders suggests that the ICT Training Package is difficult to engage with. Stakeholders suggested that employers and learners would benefit from the use of a common language to describe digital skills and how they relate to training products.

This lack of a common language means that pathways into tech jobs through training are not well understood by stakeholders, including industry, who cannot see their skill needs reflected in the training package.

Skills frameworks can help to address this issue by providing a common language to identify and describe key areas of digital and technical competence. Frameworks can provide a reference point for designing training products, including identifying gaps in existing ICT training products. By referencing a common framework, industry will be able to see their needs reflected in the ICT Training Package.

The Australian Government recently recognised the following international frameworks as preferred guides for digital skills and training activities:

Skills Framework for the Information Age (SFIA)

SFIA is aimed at digital professionals and defines the skills and competencies required for digital specialists. Australia has a multi-year whole-of-country license for SFIA. Importantly, key Australian industry stakeholders, including the Australian Computer Society (ACS), partner with, and use SFIA to support the digital community in Australia.

Digital Competence Framework for Citizens (DigComp)

DigComp has been recognised as the preferred framework for digital capability skills. DigComp supports broad digital competency rather than specialist skills. As per earlier recommendations in the 'Defined Purpose' focus area, generalist digital skills would sit within the BSB Training Package and be imported into ICT qualifications as required. This will support the use and adoption of digital capability products across industries.

Basing the ICT Training Package (and the BSB Training Package digital capability products) on these proposed frameworks will ensure that design and development is based on the most up-to-date needs of employers and make it easier for training providers, learners, and industry to engage with the training package. Consistent with the recommended purpose of the ICT Training Package contained in the 'Defined Purpose' focus area, the ICT Training Package would be focused on specialist skills, aligned with SFIA, while digital capability skills described in DigComp would be reflected in the BSB Training Package.

There is a need to define and clearly communicate pathways to both industry and learners

Stakeholders report it can be hard for potential entrants into the tech sector to identify entry-level roles, career paths in ICT, and to understand training pathways. Stakeholders consistently expressed that the ICT Training Package in its current form is not effective in providing a clear understanding of the pathways between the ICT Training Package and technology-based jobs. This view is supported by FSO's Technology Workforce Plan[16], which found that learners are experiencing uncertainty about career pathways and the relevance of their qualifications in the technology industry.

Potential entrants into the technology sector are struggling to identify entry-level roles. Stakeholders report that young people do not know much about the roles and careers in the technology sector, and that *'pathways from Years 11 and 12 [into tech] are non-existent.'* Stakeholders told us that understanding of ICT careers in schools is limited.

Some stakeholders also suggested that a lack of clarity around those aspects may contribute to low enrolment rates. Clearly communicating pathways with potential entrants is a priority and should encourage more learners to enrol in VET options. Clear pathways should also clarify to employers why they should consider hiring VET graduates.

The 'Relevant and Responsive' focus area covered the use of entry-level pathways as a tool to work with industry to capture the skills across related entry-level tech jobs. By doing this, we can not only design training to meet industry needs but also communicate pathways to all stakeholders, providing clarity on how to engage with training.

We heard from a number of stakeholders, particularly RTOs, that the Companion Volume Implementation Guide (CVIG) could be better used to illustrate to all stakeholders the pathways through training and into ICT careers. This could also evolve to become a communication tool which actively helps RTOs to implement the ICT Training Package and engage learners.

Stakeholders reinforced that there is a lack of career advice specific to jobs in the tech industry. Stakeholders believe that industry can help to grow the digital workforce by working with schools and learners to raise awareness about the sector and make the connections between school pathways and technology jobs clearer. The use of pathways and clear communication of those pathways through a revised CVIG will provide useful information for teachers and career advisors in schools.

> "From the outset, industry should be engaging with schools and students to raise the profile of the technology sector. Parents and students don't know what they don't know. By highlighting the various options available to students and having placements or practical experience, students are able to connect the jobs they would like to pursue with the skills that are required."
>
> State government workshop participant

16 FSO (2024) *Technology Industry Workforce Plan 2024*, FSO.

Addressing diversity challenges

The technology industry recognises the need to diversify its workforce to address skill shortages and better reflect the diversity of the Australian population. Improving diversity of the tech workforce is one of the five pillars for achieving the shared commitment between the Australian Government and the Tech Council of Australia to reach 1.2 million tech jobs by 2030[17].

FSO's 2024 Workforce Plan[18] for the tech sector found that:

- only **30.7%** of the technology sector workforce are women
- **less than 1%** of the workforce identify as having a disability
- **less than 1%** identify as First Nations

Addressing diversity in training may assist in increasing the number of workers coming into the sector and address the skills shortage. It may also boost attraction and retention rates, as the sector becomes more inclusive and representative of the population.

There appears to be an appetite for this type of change, with '64% of technology workers consider improving diversity representation in the workforce as an industry priority.' [19]

Attracting and retaining diverse learner cohorts is a challenge. Stakeholders report that training product design must be more inclusive and accessible to enable diverse learners to be successful.

Learners' needs must be central to the way the ICT Training Package is developed, designed and delivered. Specific focus must be placed on addressing the needs of priority groups such as women, Aboriginal and Torres Strait Islander people, and other underrepresented cohorts, to ensure VET is accessible and effective for everyone.

In the 'Supportive of Flexible Pathways' focus area, there is discussion around a more deliberate and modular approach to training package design.

A key benefit of this approach is the potential delivery of training in a way that increases accessibility for underrepresented cohorts.

17 Tech Council of Australia (2022) *Getting to 1.2 million. Our roadmap to create a thriving Australian tech workforce*, Tech Council of Australia.
18 FSO (2024) *Technology Industry Workforce Plan 2024*, FSO.
19 Australian Computer Society (ACS) (2023) *Australia's Digital Pulse Report.*

Addressing diversity challenges

Continued...

Feedback and research indicate that priority cohorts often face several challenges with participation and success in training, including:

- Access to technology and reliable digital infrastructure (particularly for those in rural and remote areas).
- Financial constraints.
- Lack of flexibility to accommodate family and cultural commitments.
- Lack of diverse role models in technology careers.

Stakeholders have emphasised the need to deliberately attract, retain, and support priority cohorts to be successful in tech industry training and careers. This includes considerations beyond the ICT Training Package, including funding approaches and targeted interventions to promote equitable access to quality training for all learners.

Further reading to support the methodology

Appendix B. Key insights by stakeholder group

Appendix C. Literature review: Research on the evolving ICT landscape: skills, trends, and educational pathways

Key insights: Challenges facing priority cohorts

First Nations people

1. Limited access to education and training: Many First Nations people face geographical and socio-economic barriers that limit their access to quality education and training opportunities.

2. Cultural barriers: There is often a lack of culturally appropriate training programs that respect and integrate First Nations cultures and languages.

3. Underrepresentation in STEM fields: First Nations people are significantly underrepresented in STEM fields, with less than 1% holding a university STEM qualification and less than 5% holding a VET STEM qualification.

Women

1. Lack of mentors and role models: Women in tech often struggle with the lack of female mentors and role models, which can hinder their career progression.

2. Gender bias and unequal opportunities: Women can face gender bias in the workplace, leading to unequal growth opportunities and pay disparities compared to their male counterparts.

3. Work-life balance challenges: The lack of childcare options and male-dominated teaching and training environments can make it difficult for women to balance work and family responsibilities.

People with disability

1. Discrimination and exclusion: People with disability often face multiple layers of discrimination, which restricts their opportunities for equal participation in economic, social, educational, and political life.

2. Inadequate support services: There is often a lack of adequate support services and reasonable accommodations in educational and workplace settings.

3. Higher levels of disadvantage: On all measures of social and economic participation, people with disability are disadvantaged compared to those without disability.

Case study

Breaking down barriers: Developing solutions to accommodate learning styles at Federation University

Dr Adam Bignold (TAFE Teacher, Information Technology/Cyber Security)

In regional Victoria, Federation University TAFE teacher Dr Adam Bignold is breaking down barriers to learning.

Adam, who won VET Teacher/ Trainer of the Year at the 2024 Australian Training Awards, has changed the way Federation University delivers vocational IT courses to accommodate diverse cohorts.

It started with offering blended learning and evening classes, which increased enrolment and retention for people with carer responsibilities, work commitments, neurodiversity and health considerations.

"Blended learning allows people to choose each day whether to come into the classroom or learn online," Adam explains.

In finding ways to engage these diverse learners, Adam looked for ways to accommodate different learning styles. He replaced exams and long-form assignments with project-based assessments and implementing a modular approach. By breaking down the training into smaller, manageable modules, learners can progress at their own pace, reducing the feeling of being overwhelmed and increasing their confidence and engagement.

Adam explains this was more engaging for students, reducing their anxiety as well as providing better preparation for their careers.

"The jobs these students are going for don't involve writing assessments or performing exams," he says. *"You're presented with a problem, so we've brought project and problem-based learning into the classroom."*

"Blended learning allows people to choose each day whether to come into the classroom or learn online."

Dr Adam Bignold, TAFE Teacher, Federation University

Adam's approach incorporates several principles of Universal Design for Learning principles, such as delivering content in multiple ways.

"We will have our Moodle shell, with text for students to follow, multiple choice questions for students to check their understanding and then in class, we have a discussion, walking students through it."

Federation University also adds value by offering access to non-accredited industry certificates, including those offered by Cisco, Amazon and Google, allowing students to build specialised skills to add to their CVs.

"The students can get an intro and learn the basics from our class and if they like it, they can go off and do vendor certificates," Adam says.

"Contributors to improved retention is the flexible learning options and the work we've done around breaking down barriers to learning."

Recommendations to be Clear and Accessible

ICT Training Package recommendations

1. **DigComp and SFIA**
   - to be used as a reference for developing training products
   - to provide a common language to help learners and employers recognise connections between skills and application to a range of roles and tasks.

2. **Use the CVIG, supported by the Qualification Development Quality Principles, to clarify information for training providers, learners and employers on how:**
   - training aligns with workplace needs
   - to navigate qualification requirements and pathways
   - to enable reasonable adjustments in implementation to support diverse learners
   - assess learners' skill levels at enrolment and during study including the potential use of skills assessment tools linked to SFIA and DigComp
   - customise study pathways.

3. **Identify and promote entry-level pathways to lift awareness** to learners, career changers and careers advisors.

4. Design training products that **encourage the application of Universal Design for Learning** by training providers.

5. **Include diverse stakeholders in consultations** on draft content with a focus on accessible and flexible learner-centered design.

System recommendation

6. Work with states and territories to **increase awareness of technology-based careers and participation of school students** in the ICT Training Package.

FOCUS AREA 4

Designed to be Deliverable and Updatable

Training package updates must balance the costs to training providers (associated with implementing new training products) with the need for ongoing updates that meet emerging industry skill needs.

This balance can be supported by developing a flexible approach that allows for regular updates to delivery content, while retaining alignment with training products. It is critical to ensure RTOs are equipped with the right resources to support implementation.

"Technology never stops evolving. And the package is still a little too prescriptive."

RTO Stakeholder

FOCUS AREA 4

What we heard from our stakeholders

- ICT content can become outdated quickly given the speed of technology change. Updates to the training package haven't kept pace.
- Over-prescription in current training products restrict training providers' ability to contextualise.
- Developing new teaching and learning products is costly for training providers.
- There is a need for more specific implementation advice to support training providers.
- The training system must be responsive to technological change and demand, and ensure emerging technologies are identified and addressed in updates to the ICT Training Package.
- Greater industry participation is required to support VET workforce challenges:
  – shortages of qualified ICT teachers/trainers
  – maintaining currency of skills in emerging and changing technologies.

FOCUS AREA 4

The need to reduce prescription in Units of Competency

The rapid pace of change, coupled with the prescriptive nature of the current ICT Training Package products, results in content becoming quickly outdated. This requires frequent updates to the ICT Training Package, which imposes significant recurring costs to training providers. Stakeholders highlighted the need to reduce prescription in the training package, particularly within performance criteria.

Less prescriptive performance criteria and assessment conditions can be contextualised and adapted for new and emerging technologies helping to alleviate some of the ongoing financial and compliance burdens for RTOs.

Recent Ministerial decisions regarding the Qualification Reform (December 2024)[20] provide important directions to enable the design of training products without unnecessary specification. The use of this flexibility is a high priority for future ICT Training Package development work. Qualification Reform approaches will benefit training providers by enabling clearer and more flexible qualifications design, making it easier and more cost effective to develop and deliver courses.

The focus area 'Supportive of Flexible Pathways' discusses a generic skill set for industry certifications and emerging technology. This may help to address this issue by reducing prescription and enabling greater flexibility to adapt to changes in tech.

Consultation found that trainers and providers regularly need to adapt content and assessments for diverse cohorts. Overly prescriptive assessment criteria, and performance evidence requirements can make responsive delivery to diverse cohorts challenging. As expressed by one stakeholder:

"...while performance criteria are necessary to verify that learners can demonstrate required tasks, they can sometimes be overly restrictive or extensive, limiting the scope for additional, valuable learning experiences."
RTO stakeholder

"Empower people to allow for more interpretation according to the industry requirements... because sometimes if we are extremely specific in the performance criteria and the elements, the technologies keep advancing...."

Industry stakeholder

20 VET Qualification Reform - Department of Employment and Workplace Relations, Australian Government

FOCUS AREA 4

Consideration of RTO perspectives on the ICT Training Package and delivery challenges

Proposed updates to the ICT Training Package need to be considered alongside advice from RTOs, so that the changes can be prioritised and balanced against practical delivery issues. Maintaining strong networks between FSO, industry and RTOs will be key to ensuring that industry understands what RTOs can and can't do, as it relates to training delivery.

During the development process, consideration must also be given to the commercial realities faced by RTOs. An idea might have strong support from employer stakeholders (e.g. mandating that all learners have access to a piece of hardware) that renders the training product commercially non-viable for an RTO to deliver. What originates as a well-meaning attempt to increase the relevance of training can inadvertently lead to an under-supply of RTOs actively delivering the product.

FOCUS AREA 4

Supporting quality implementation is a priority

Alongside any updated training package or process it is important to consider the support RTOs will require to implement the new changes. Stakeholders emphasised the value of using the CVIG to provide guidance on delivery and assessment of training. These resources can provide essential information for structuring training and assessment strategies and can introduce emerging technologies and detailed instructions on implementation. This will also support RTOs to identify and use (where possible) industry-preferred applications, approaches and delivery modes.

Some stakeholders noted that while CVIGs are generally helpful, they can sometimes lack specific guidance, particularly regarding work placement information and defining concepts like simulated environments.

These stakeholders requested FSO consider developing a targeted guide that addresses current industry needs, offering practical examples and real-world applications.

Further suggestions included ensuring the guide is regularly updated to reflect emerging technologies and industry standards, and that it contains detailed advisory information for trainers. This could include best practices for implementing self-study components and offering flexibility in how learners can engage with course materials, such as working on projects independently or through home study.

The new features of the national skills system, particularly TAFE Centres of Excellence, offer opportunities to support development, sharing of learning and training resources, and best practices. Any future Digital Centre of Excellence would be a key delivery partner for best practice delivery of the ICT Training Package and the use of resources.

"Really use the companion volume effectively and rapidly... as a real support to trainers. To guide them in the latest that should be included in ICT training and assessment."

Curriculum Maintenance Service stakeholder

FOCUS AREA 4

Establishing a feedback loop for continual improvement

Stakeholders throughout the process suggested the need for a regular feedback loop to stay across changes in the ICT landscape. Given the rate of change in ICT this is critical to enable appropriate updates as technology evolves. Stakeholders suggested the need for regular review cycles, supported by industry input, to ensure that the ICT Training Package meets industry requirements and continues to remain relevant and responsive. Building regular consultation and feedback into the new ICT Training Package design will be essential to future success.

With an established feedback loop in place, there is the need to ensure the system can respond. One option is to reduce prescription in the UoCs but increase detail within the CVIG. This could reduce the need for updates to the ICT Training Package where changes can be supported by additional guidance material only.

Related recommendations in this report will also support the system to respond to a continual feedback loop:

- a generic skill set, to incorporate industry certifications or emerging technologies (refer to the 'Supportive of Flexible Pathways' focus area), and
- the Training Product Trial approach to support improved speed to market where there is a need for new training products identified through the regular feedback loop (refer to the 'Relevant and Responsive' focus area).

"Implement a design that will... carry on and be able to be upgraded without having to rebuild the whole world every time."

Industry stakeholder

FOCUS AREA 4

VET workforce challenges need to be addressed

RTOs face challenges in attracting and retaining trainers with up-to-date technology expertise. This was highlighted by stakeholders concerned about the quality of ICT training and the ability to meet industry demands.

A shortage of qualified trainers with up-to-date industry knowledge and experience, particularly in emerging technology fields, hampers the quality of training delivery. The lack of experienced trainers reduces the overall effectiveness of training, limiting learners' exposure to current technologies and industry practices.

There is a critical need for industry involvement in designing and delivering training programs to ensure they meet industry needs.

Trainer currency and upskilling were mentioned by stakeholders as priorities, with proposals for how this can be supported through:

- providing teaching and training resources to enhance national consistency
- short placement opportunities in industry workplaces.

Challenges facing the VET workforce are well recognised by the Australian Government. Jobs and Skills Australia's VET Workforce Study[21] and the VET Workforce Blueprint[22] demonstrate government prioritisation of this issue. FSO and other JSCs have been directed to identify and respond to VET workforce challenges faced by the industries within their remit. The work undertaken by JSCs will complement and contribute to the opportunities and actions identified within the Blueprint.

The attraction, retention, and currency of trainers' skills are critical to our sector and require proactive measures and support mechanisms. Collaboration between industry and training organisations, supported by entities like JSCs, can help bridge the gap between training and industry requirements. There may also be opportunities to signal to industry the importance of industry engagement in training, with the Australian Government having a role in encouraging greater engagement with the Training and Education (TAE) Training Package.

21 Jobs and Skills Australia (2024) *VET Workforce Study.*
22 Department of Employment and Workplace Relations (2024) *VET Workforce Blueprint.*

Recommendations to be Deliverable and Updatable

ICT Training Package recommendations

1. **Design new training products in alignment with recent Qualification Reform decisions** to support a qualification-first approach for clearer and streamlined training products, making it easier to develop, administer and deliver courses.

2. **Seek input from training providers** to understand the implementation implications of updates and changes to ensure ongoing delivery remains commercially viable.

3. Balance the need for **clarity in training products with the flexibility needed to support training providers** to respond to new technologies and maintain the currency of the ICT Training Package.

4. **Provide guidance and information for the VET workforce** to support implementation of new and updated skills and knowledge in the ICT Training Package.

5. **Include additional implementation guidance in the Companion Volume Implementation Guide** (CVIG), for example, incorporating emerging technology and work placement information.

6. **Establish and communicate a regular review cycle.**

System recommendations

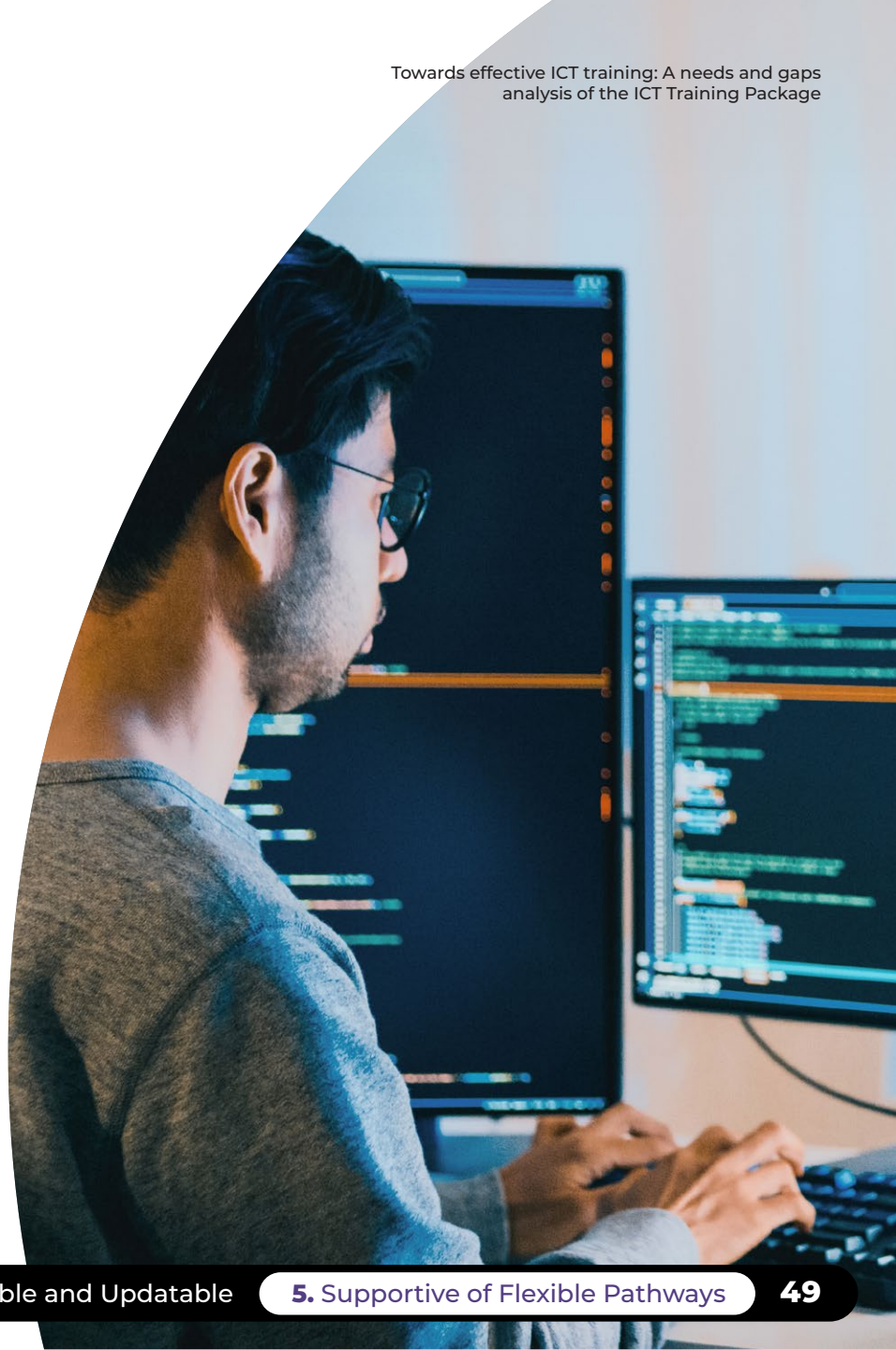
7. Explore opportunities to **support the establishment of, and collaboration with, a Digital Centre of Excellence** to promote best practices and share resources.

8. **Support VET workforce industry-led initiatives** for attraction, retention, and industry cooperation via FSO's VET Workforce Activity.

9. **Advocate for the Australian Government to consider incentives** that support industry completion of TAE requirements for ICT trainers.

FOCUS AREA 5

Training that is **Supportive of Flexible Pathways**



The Tech Council of Australia estimate that Australia will need to employ an additional 653,000 tech workers by 2030 to meet the shared goal of 1.2 million tech workers. This is 186,000 above 'business as usual'[23].

This increase won't be met through higher education pathways alone and there is a need to develop alternative pathways into the technology industry including through upskilling and reskilling workers. Stakeholders were clear that the ICT Training Package must cater to diverse learner needs, lifelong learning and different career journeys. Learners must be able to move into and out of learning as needed to support their life and work goals.

Connections between VET and other parts of the education and training system need to be seamless and clearly identified, including support for learning in the workplace. The diverse ways people develop digital skills stakeholders reinforces the need for consistent recognition of prior learning.

23 Tech Council of Australia (2021) *The economic contribution of Australia's tech sector,* Tech Council of Australia.

FOCUS AREA 5

What we heard from our stakeholders

- Flexible pathways into and out of the ICT Training Package to other education options and the workforce should be enabled.
- The ICT Training Package should support lifelong learning and flexible entry and exit points by providing stackable training products leading to qualifications recognised by the VET system and industry.
- Better understanding and use of RPL is needed.
- Training package design must support flexible delivery options, including in the workplace, for example, earn while you learn programs.
- Training products need to meet industry and learner demand for short courses of training that can provide specific skills.
- There is a need for a modular and stackable learning approach.
- Industry certifications are preferred by employers.
- Accredited VET training needs to better recognise in-demand industry and vendor certifications.

"By making training packages more stackable and easier to update, learners can transition faster and improve their employability in the rapidly changing ICT industry."

RTO Stakeholder

Adoption of a modular and stackable approach

Stakeholders expressed the need for greater flexibility to accommodate different career paths. They agreed learners should be able to leave training with skills that are led and recognised by employers. Many suggested the approach to training package design should construct qualifications as deliberately 'modular' that can be stacked. This method aligns with Qualification Reform directions by ensuring that exit points are clearly defined at each stage.

As outlined in focus area 'Clear and Accessible' a modular approach supports diverse cohort of learners. This approach allows learners to exit their studies at various points that align with their learning goals and capacity/availability to study.

Through this approach learners can engage when they need to, are able to work towards a qualification over time and continue to add new skills over the course of their career.

There are currently too many core units within ICT Training Package qualifications, a modular and stackable ICT Training Package requires a reduction in these. This will create a balance between core units (providing the critical technology skills that are required across ICT job roles) while enabling choice around electives to build greater depth in specialisations.

A modular and stackable approach enables greater flexibility and ensures the training system remains responsive to the evolving needs of industry and learners; both workforce entrants and those considering a career change.

Stakeholders noted when updating the ICT Training Package there is a need to be conscious of:

- catering to entry-level workers, individuals seeking career changes and those pursuing career progression
- outlining potential pathways into and through the ICT Training Package and into jobs
- providing comprehensive information on skills and qualifications to support mobility of professionals from other fields and from other parts of the education and training system.

Within the ICT Training Package there are existing qualifications which function as foundational learning.

Stakeholders noted the need to provide clear pathways. There is a need to consider the ICT Certificate II and III qualifications and how they can develop the foundational skills and knowledge for successful articulation into specialisations.

To support diverse groups of learners and provide flexible pathways, the ICT Training Package Update should consider how to develop qualifications which are suited to 'earn while you learn' approaches.

"By making training packages more stackable and easier to update, learners can transition faster and improve their employability in the rapidly changing ICT industry."

Education stakeholder

Adoption of a modular and stackable approach

Continued...

These enable greater flexibility and opportunities to gain workplace experience for learners who can earn a wage while completing their training.

As per the findings of the Digital and Tech Skills Working Group (DTSWG)[24], earn while you learn pathways are under-utilised in the tech industry, and there are clear opportunities to strengthen these pathways. FSO is undertaking a dedicated project on earn while you learn approaches and the design of the ICT Training Package will certainly play a role in promoting the utility and uptake of earn while you learn models.

24 Department of Employment and Workplace Relations (2023) *Digital and Tech Skills Working Group. Final Report.*

Key insights: What's needed for the ICT Training Package to be supportive of flexible pathways

Modular and flexible learning

- Structure the training package to support short, focused training modules that empower learners to progressively build skills and knowledge that align with their unique career goals.
- Allow learners to choose training pathways that suit their desired career trajectory, providing the flexibility to specialise or diversify their skillsets while advancing toward broader qualifications.

Vertical and horizontal progression

- Design a training package that supports vertical progression (stackable modules leading to full qualifications) and horizontal progression training across disciplines or specialisations, enabling career growth and adaptability.

Clear learning pathways

- Establish transparent pathways with defined entry and exit points, allowing learners to seamlessly transition between skill-building modules, specialisations and qualifications depending on their career stage or goals.
- Offer specialisations that allow learners to tailor their training to align with specific career paths or industry demands, promoting targeted skill development.

Industry alignment

Focus on creating specialisations that address industry-identified, high-demand skills, ensuring learners are equipped to meet workforce needs.

"Pathways should allow students to tailor their learning to specific job requirements, ensuring the relevance of skills developed in relation to actual career opportunities".

State Government stakeholder

Enabling lifelong learning, career development and progression

Careers in ICT can be less linear than other industries and need to support a diverse learner cohort, including entry-level workers, those with existing but unrecognised skills and mid-career 'lane changers'[25]. Lifelong learning opportunities, in the form of 'bite-sized' training, are essential for all cohorts, in response to rapidly evolving technologies.

Stakeholders emphasised the need for clear pathways into and out of the ICT Training Package, with the flexibility to cater to all cohorts. Recognition of existing skills and clear connections to other parts of the education system are seen as key for those entering the workforce and those thinking about a career change.

Consultations found that *'the ICT package is crucial for lifelong learning'*, but pathways into, and through, ICT training can be complex to navigate. Stakeholders suggested building an understanding of pathways into and within ICT roles by mapping skills from entry-level positions (i.e. helpdesk roles) to advanced positions (i.e. cyber roles). This would include developing training products in a way that supports mobility, allowing workers from other industries to transition into ICT roles.

Stakeholders also pointed to an opportunity to support mature learners with prior experience by enrolling in *'higher level qualifications...rather than starting from lower certificate levels, to avoid redundancy and better align with their skill level.'* Creating flexible pathways for people without formal qualifications and enabling lifelong learning and career progression, especially in emerging areas like cyber security and cloud computing, will be critical to attracting talent. The recent establishment of Vocational Degrees opens up additional opportunities for those with existing skills to engage with and further grow their skills through VET training. Stakeholders suggested that designing the ICT Training Package to enable existing skills and knowledge to be easily understood and recognised will assist in targeted career transitions from parallel industries into ICT.

Clear pathways into and from VET to other parts of the education and training system are also needed. School learners need clarity on how to navigate the ICT Training Package to gain the foundation and specialist technology skills to take them from school to jobs and careers in the tech industry. Similarly, a clear pathway from higher education to the ICT Training Package can support graduates to obtain practical, real-world, industry-relevant skills. Skills obtained in the VET system are increasingly being recognised as a pathway into further training in higher education.

25 Addendum No. 7 to AQF Second Edition January 2013 Vocational Degree Qualification | AQF https://www.aqf.edu.au/notifications/new-aqf-qualification-vocational-degree

FOCUS AREA 5

Working with and recognising industry certifications

Industry-recognised credentials are viewed as crucial for equipping students with the foundational knowledge and practical abilities they need to be effective in their jobs from day one.[26]

Stakeholders reinforced the need for the ICT Training Package to work with industry certifications. Industry certifications are widely used within the tech industry and are preferred by many employers over VET qualifications.

Stakeholder preference for industry certifications is underpinned by two key drivers:

1. **Relevance and responsiveness** – the ability of industry certificates to be updated rapidly and remain closely aligned to changing industry needs, and
2. **Language** – skills are described using language that more closely aligns to the workplace and is more recognisable to employers.

The ICT Training Package Update will respond to the second driver by working with industry on a common language for digital skills, as outlined in the focus area 'Clear and Accessible'.

For the first driver, an innovative approach will be considered in the form of a new 'generic skill set'.

A 'generic skill set' could enable emerging technologies to be reflected in the ICT Training Package in a dynamic way, as well as enabilng closer integration of industry certifications. A 'generic skill set' has the potential to ensure that the training package works with industry certifications.

An innovation such as this could reduce over prescription and enable flexibility in application/contextualisation. This approach could enable training to include emerging tech and accommodate preparation for industry certification exams. This approach supports the ability for the training package to remain current with emerging technology.

"Hiring managers and HR currently give a lot of weight to industry certs like CompTIA, AWS, Cisco, and Microsoft. TAFE ICT qualifications don't carry the same weight, which means job seekers are at a disadvantage. A clear mapping between TAFE skills and industry certifications, would make it easier for our members to get hired and for employers to recognise their training."

Union stakeholder

26 ICT NGA Stakeholder consultation

FOCUS AREA 5

Working with and recognising industry certifications

Continued...

There is strong appetite from stakeholders to consider how non-accredited training modules from large vendors could be recognised in the ICT Training Package. Stakeholders consider that this will ensure graduates are genuinely job-ready and have skills valued by employers. This connection may help to demonstrate the value of VET in a way that is tangible to employers.

Overview of proposed arrangements for an Industry Certification generic skill set

Integration of a flexible generic skill set into the ICT Training Package responds to emerging technologies and the growing demand for industry-certified skills.

It is proposed that the generic skill set consist of four UoCs designed to be broad and adaptable. This would enable RTOs to contextualise training to meet the needs of specific certifications or emerging technologies. Embedding a generic skill set supports the flexibility of the ICT Training Package and allows it to be more responsive to industry demands, while maintaining the integrity and quality of the VET system.

Key benefits

Flexible and responsive

- Quick adaptation to new and emerging technologies and industry needs.
- Ensuring training remains relevant and up to date.
- Enables the integration of industry-aligned technologies and certifications into VET training.
- Prepares learners with the foundational skills underpinning industry certifications, making it easier for learners to pursue certifications later.
- Uses generic performance criteria to allow RTOs to contextualise training for specific certifications.

Flexible delivery

RTOs can deliver this skill set:

- as standalone for upskilling
- embedded into larger qualifications (e.g., Certificate IV or Diploma of IT); and/or
- contextualised for specific industries (e.g., healthcare, finance, manufacturing).

FOCUS AREA 5

Case study

Academy IT: Empowering First Nations learners through modular, flexible and inclusive training

> "This is something we're proud of - that we could engage the students, keep them excited and interested enough to continue on and learn and keep learning."
>
> Michael Williams, CEO, Academy IT

Michael Williams (CEO) and Brian Peel (Managing Director)

South Australian-based RTO, Academy IT, is having great success engaging First Nations learners with innovative modular and flexible delivery methods.

As part of a pilot program delivered face-to-face in Fremantle, Western Australia, Academy IT offered the ICTSS00107 Introductory Help Desk Skill Set to a cohort of First Nations learners, aiming to ready learners for traineeships.

First Nations peoples represent less than 1 per cent of tech workers. Enrolments and completions in VET technology programs for First Nations learners have been declining since 2015. Academy IT CEO Michael Williams explained learners in the pilot's cohort had faced challenges including limited access to culturally appropriate education and training, health problems and family pressures.

In response, Michael says training was offered with a flexible schedule over four weeks, incorporating culturally inclusive teaching methods such as yarning (storytelling), role playing and hands-on activities.

Michael says the skill set allowed the learners to gain foundational IT and customer service skills, as well as a tangible pathway to employment.

"We felt that using the ICTSS00107 Introductory Help Desk Skill Set was a great starting point for the learner to gain some employability skills in general, but certainly to give them a taste of what it can be like in a customer service type role."

The skill set is fully incorporated into Academy IT's Certificate III in IT, providing a pathway for learners to further study and Michael noted it's also an entry-point for working in tech.

Michael says offering a modular approach, with just four units, rather than a full qualification, contributed to the program's success, including a 90% completion rate and several learners, finding employment.

"This is something we're proud of - that we could engage the students, keep them excited and interested enough to continue on and learn and keep learning."

Despite the program's success, Brian and Michael say challenges remain, including finding employers to offer traineeships for First Nations learners and addressing funding gaps.

Academy IT's results underscore the potential for modular and flexible delivery to empower First Nations peoples to pursue IT careers.

Recommendations to be Supportive of Flexible Pathways

ICT Training Package recommendations

1. Update the structure of the ICT Training Package to be 'modular and stackable'

- 'Modular and stackable' (a term used by stakeholders) is consistent with the Qualification Reform to enable training products (UOCs, skill sets) to be sequenced and build towards a qualification and to support lifelong learning and upskilling.

A phased approach is recommended to introduce this:

- Reduce/streamline UoCs and skill sets within the existing ICT Training Package to focus on industry-relevant skills.
- Consider how skill sets sequence/stack into and within qualifications that have multiple entry and exit points.
- Introduce new UoCs and skill sets aligned with proposed new modular and stackable structure.
- Update packaging rules to specify core units and specialisations (see System recommendation (6)).

2. Redesign ICT Certificate II and III to provide an introduction to tech and pathway to specialisations

Reduce the current number of electives to reinforce the foundational focus.

3. Consider a reduction in the number of core units

This will allow for greater flexibility in specialisations and reduction in the number of electives to focus learners on the most critical skills.

4. Explore feasibility of introducing a flexible, generic skill set to:

- Accommodate the introduction of new and emerging technologies
- Prepare learners with skills and knowledge for industry certification exams
- Support recognition of skills gained from industry certifications.

5. Consider design of qualifications to support delivery through earn while you learn approaches, consistent with the principles defined by the Digital and Tech Skills Working Group.

System recommendation

6. Advocate for funding approaches that enable individuals to work toward 'stackable' qualifications, with optional exit points aligned to priority skill needs and continuous lifelong learning.

FUTURE SKILLS ORGANISATION
Finance Technology Business

Towards effective ICT training:
A needs and gaps analysis of the ICT Training Package

MAY 2025