



Closing the Digital Skills Gap

TAFETalks

March 2023



THE DSO at a glance...

Our purpose is to strengthen the pool of digital talent

Three years since the *Joyce Report*

33rd month of a **36th** month pilot, culminating in June '23

2,650 contacts, across **935** companies

Four goals:

- Set the foundations for a skills based approach
- Support RTOs
- Act as stewards to our core customers
- Undertake trials

Understand the
Problem

Design & Develop the
Response

Scale

Scale and Evaluate

Scale, Report and
Transition





The **digital workforce** has grown over the last 5 years, now includes **50% of Australian workers**



Most of the digital workforce **growth** has occurred in roles **outside the tech sector**



Australia will need **7.2M digital workers** by 2026 with an expected **shortfall** of **0.5M**



The national training system is **unlikely to close the gap without intervention**

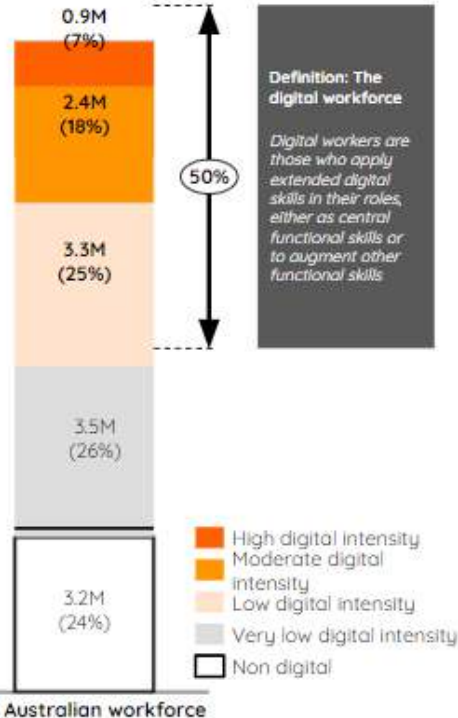
Digital workforce by digital skills intensity

Digital skill intensity¹

High intensity Extended digital skills are central functional skills of the role.
Moderate intensity Extended digital skills are routinely applied to augment functional skills, enhancing effectiveness and/or efficiency of the role.
Low intensity Extended digital skills can be applied to augment functional skills, enhancing effectiveness and/or efficiency of the role.
Very low intensity Application of extended digital skills is nascent, with very limited and inconsistent demand in roles. Base digital skills are required.
Non-digital Nil or negligible application of extended digital skills. Base digital skills are required.

Workforce composition by digital intensity

Millions of workers, 2021



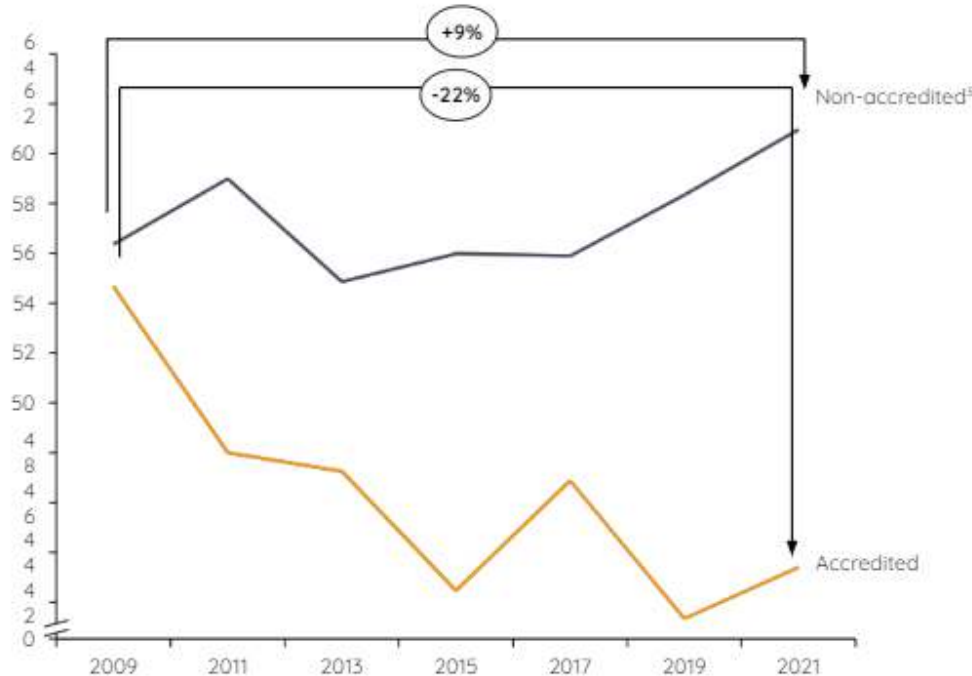
- **High digital intensity** workers are those where extended digital skills are central functional skills of the role. In 2021 they **comprised 7%** of the workforce
- **Moderate digital intensity** workers are those where extended digital skills are routinely applied to augment functional skills, enhancing effectiveness and/or efficiency of the role. In 2021 they **comprised 18%** of the workforce.
- **Low digital intensity** workers are those where extended digital skills are applied to augment functional skills, enhancing effectiveness and/or efficiency of the role. In 2021 they **comprised 25%** of the total workforce,
- **Another 26%** of the workforce are those in **very -low intensity** . For these workers, application of extended digital skills is still nascent. Historical trends indicate a number of these occupation groups will likely become low intensity in the near future.

Source: Nous digital skills taxonomy; Nous analysis Lightcast, ABS

1. Digital intensity thresholds calculated as extended digital skill mentions as a proportion of total skill mentions in ANZSCO 4-digit occupation groups: High (>20%); Moderate (5% to 20%); Low (2% to 5%); Very low (1% to 2%); Non-digital (<1%)

Employer use of VET accredited and non -accredited training 2

% of employers surveyed, 2009 - 2021



- There has been a **trend away** from employer **use of accredited** VET training over the last 10 years, with a **22% relative decrease** over this period.
- During the same period, use of **non-accredited** training has **increased by 9%**.
- **VET graduate outcomes** are likely to be contributing to this shift, if employers are not achieving skilling uplifts from training investments.

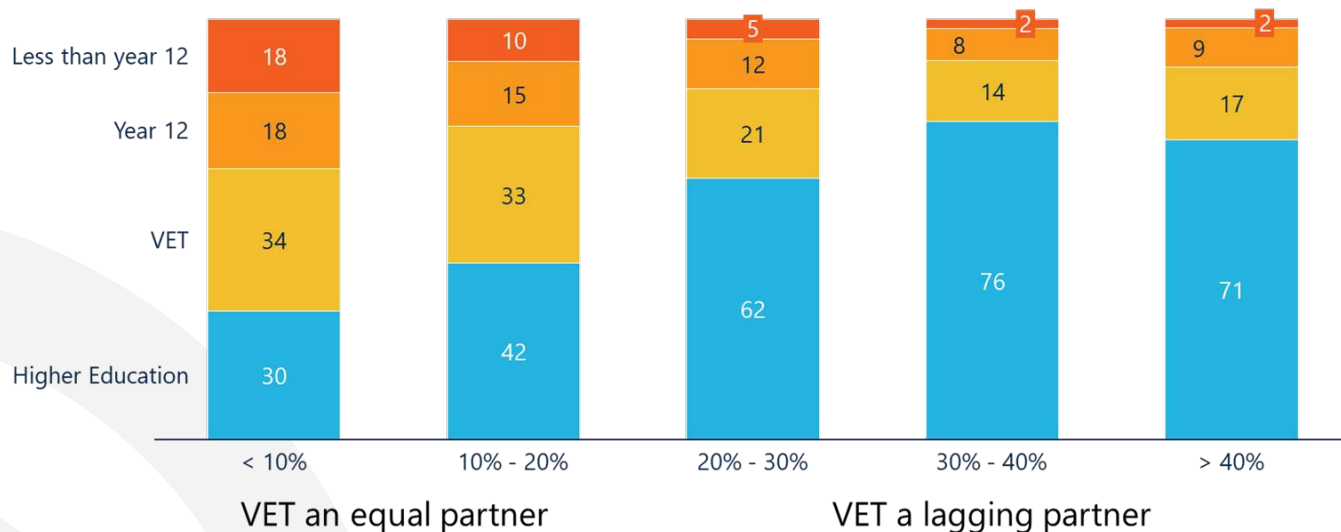
¹ Data for employers in the professional, scientific and technical services industries used as a proxy for satisfaction for digital skill learning as it is one of the most digitally intense industries.

² Non-accredited training includes any training that does not lead to recognised qualifications or an award.

Source: VOCEplus NCVET Employers' use and views of the VET system survey data table 2021; Accenture analysis.

VET is a lagging partner for more digitally advanced roles

Highest level of education obtained by digital intensity of occupation (%)



How to get VET to play its part in the digital skills challenge?

Source: Nous analysis, ABS

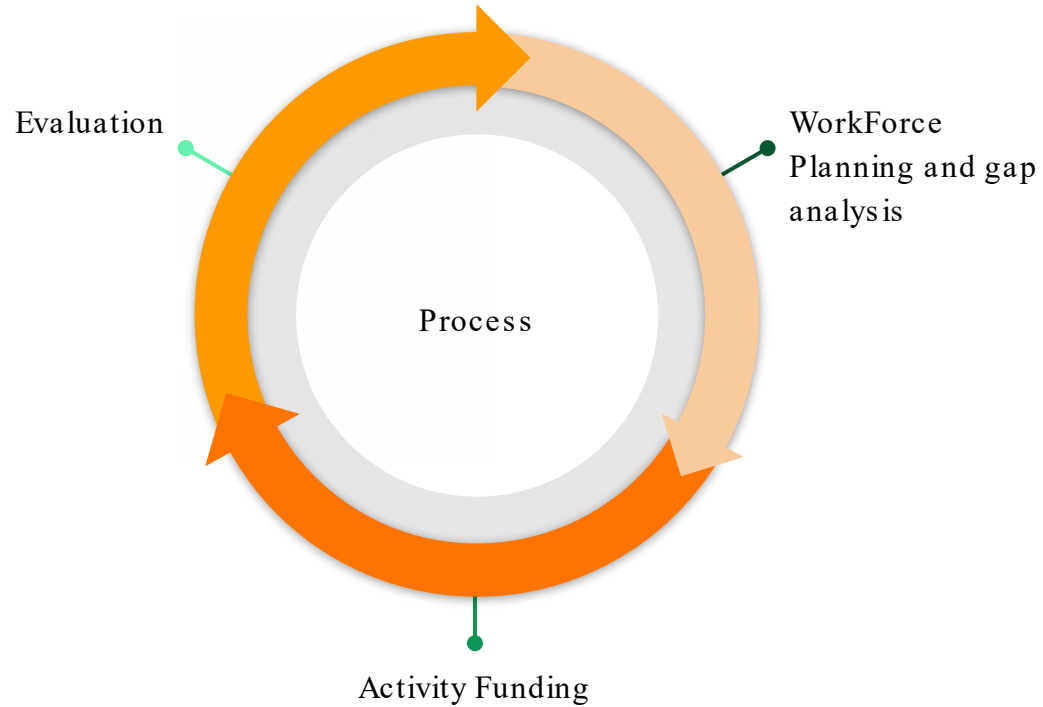
Currently job roles with a greater percentage of technical digital skills are met more through higher education than through VET.

There are **two significant challenges for VET** :

- Delivery of **digital literacy at scale** across RTOs and all training packages to ensure all have the skills needed in the economy
- How can **VET better contribute to the upskilling of entry level digital/tech** professionals roles given the training delivered by private trainers and universities.

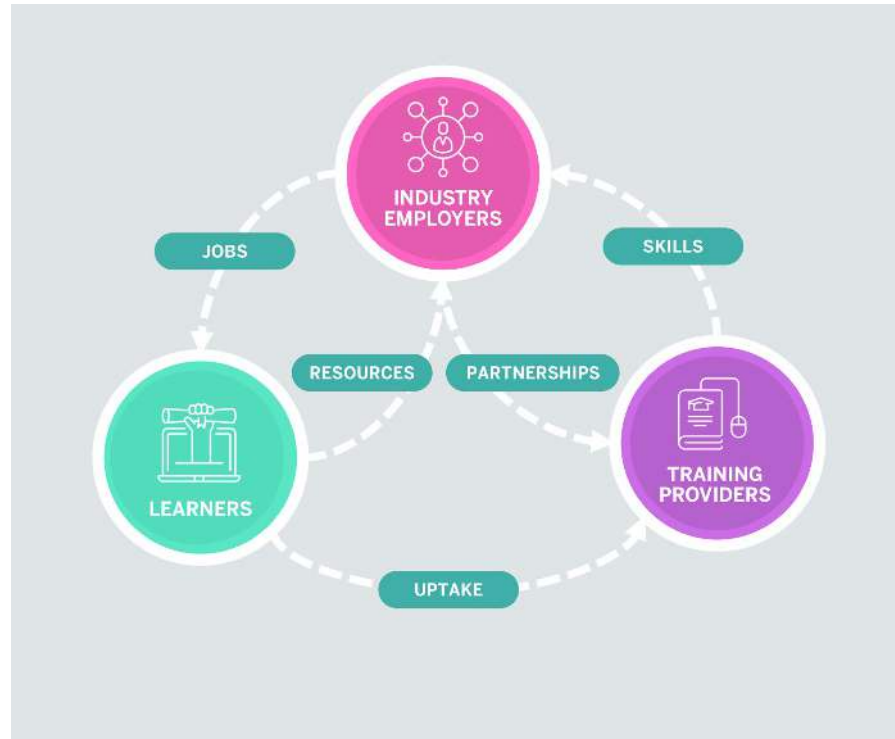
The Jobs and Skills Councils

The Opportunity



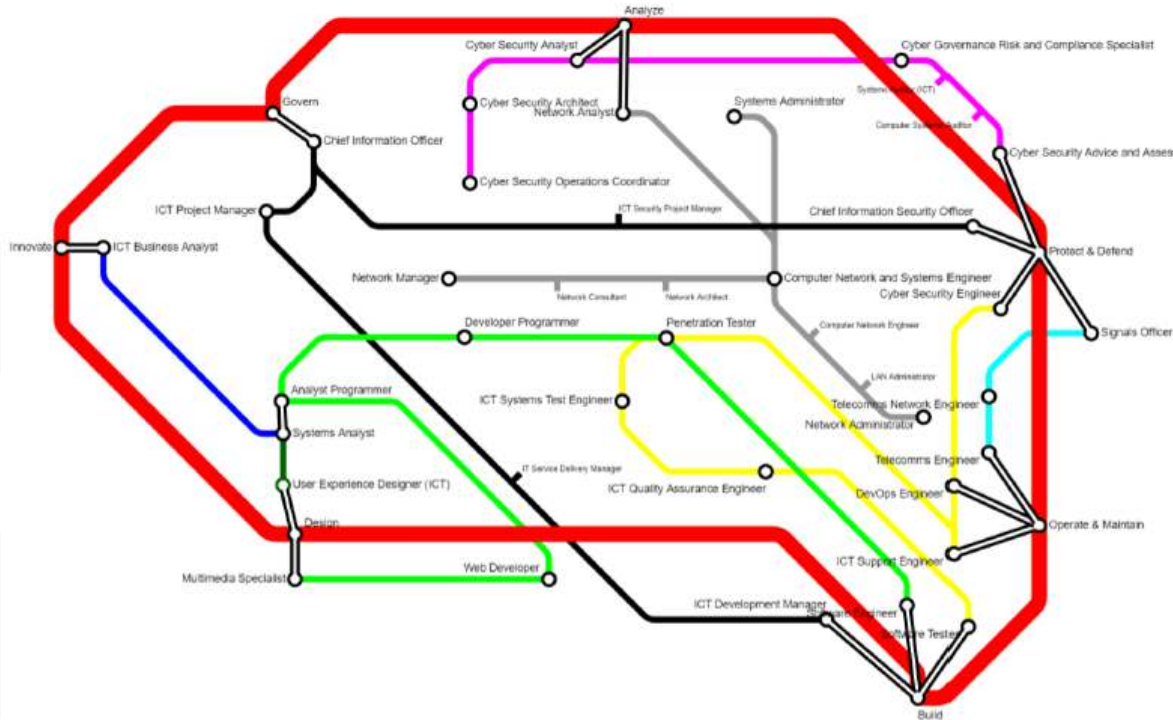
The Training Ecosystem

Moving towards a cyclical value chain



Accessible Digital/Technology Career Pathways

The 'Underground' Map of Digital Careers - Draft



- There are many ways to enter a digital career. This picture shows **different points of entry** based on acquired knowledge and skills, aptitude, desire and interest.
- **Digital and tech jobs are for everybody** irrespective of education or qualification. You can be, for example, creative, analytical or innovative and find an entry to digital careers.
- Once you determine your entry point, there are **many options** to pursue a digital/technology career depending on your goals.
- While many of the skills in technology roles are common across multiple **job families** there are certain **core skills** and attributes which everybody should have.
- By focusing only on the training employers need, it is possible to build a workforce who can **incrementally upskill over time to become more qualified for more roles.**

Digital Literacy

A single definition for digital literacy which can be used to measure Australia's Digital Literacy index and guide training.



Agree on approach and establish the Working Group

Design the description

Gain feedback on the description

Endorse the description

Develop tools and approach to undertake measurement

February

March

Future work

Thank You

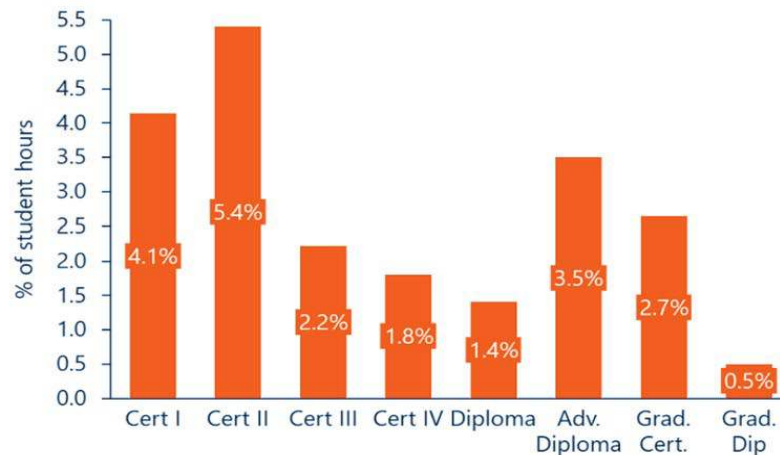
The Challenge for VET

Enrolments and completions in ICT and Cyber specific qualifications.



Source: Nous Analysis, NCVET total VET activity, Training.gov.au

Estimated share of time on digital focused subjects by level of education for all other* VET students.



*Other refers to student enrolled in a course not covered under the ICT training package or Cyber related qualifications

Meeting future demand requires **stronger digital career pathways** and more time allocated in digital upskilling

Digital Literacy is a national imperative

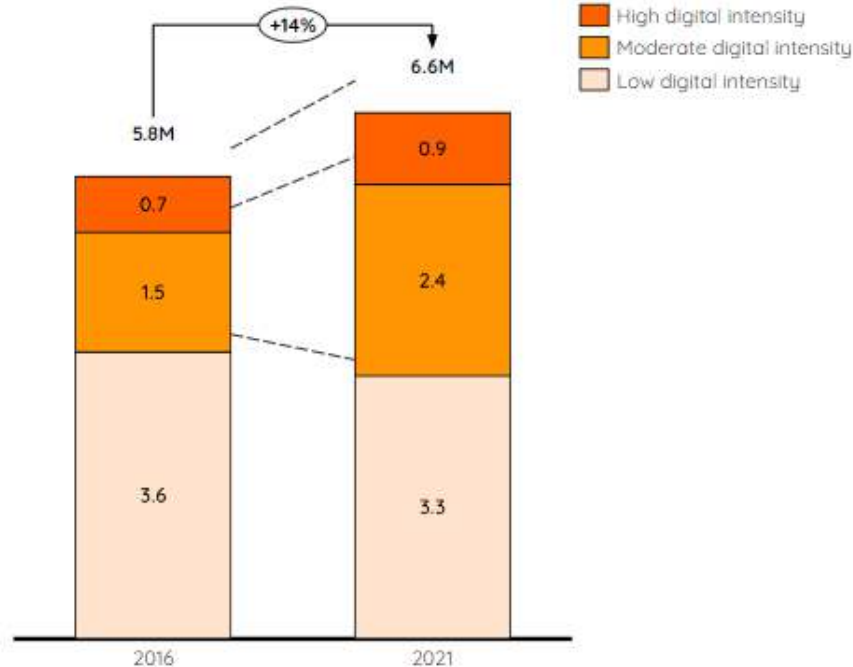
Digital Literacy is needed to be able to engage in building technical digital skills.

With the embedding of digital tools and platforms across all facets of life, the expectation for **base digital skills** is ever advancing. These skills include **digital literacy** and other base **enterprise skills** (including fluency in digital solutions, collaboration tools, data and cyber) to be able work in a digital context. Many of these skills are key to digitally participating in society and also form the **foundation of technical digital skills**.

Type of skill	Digital skill domain	Description	
Extended skills <i>More specialised and advanced skills required across different roles and industries</i>	Relationships and engagement	Soft skills required to manage stakeholders in the digital context including customers, vendors and staff.	
	Strategy and architecture	Executive level skills for the application of digital skills across an organisation including planning, governance and compliance.	
	Development and implementation	Programming languages and development platforms including the skills to design, develop and deploy digital products	
	Delivery and operations	Systems administration, application support, and other roles typically associated with the CIO function in an organisation	
	Cybersecurity	Establishing security infrastructure, monitoring and responding to cyber activity.	
	Analytics	Capturing and managing data, and applying analytic techniques to generate insights	
	Digital marketing and creation	Skills associated with the design and management of digital interaction between organisations and their stakeholders	
	Industry specialist tools	Industry specific techniques and tools such as CAD, digital imaging, and manufacturing control. Tightly coupled to a profession	
	Base skills <i>Required across the majority of the workforce, and as a base for extended skills</i>	Digital literacy	Fundamental workplace skills including familiarity with user interface elements
		Enterprise	Skills associated with management of an organisation including finance, HR and operations. E.g., ERP, CRM systems

Number of digital workers up by 14% over past 5 years

Millions of workers, 2016-2021

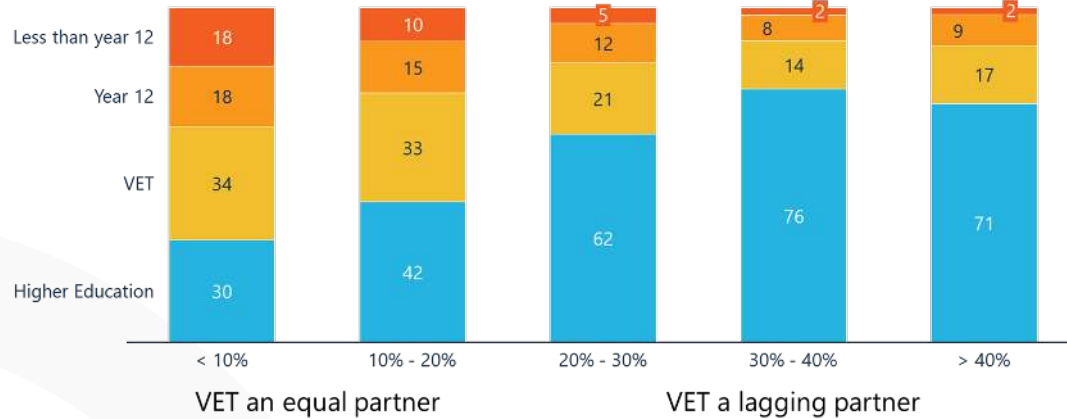


1 See Appendix B for methodology.
2 Note: Totals may not add due to rounding.
Source: Nous analysis; Lightcast, ABS

- Australia's digital workforce **grown by 14%** over the last 5 years, outpacing growth of the Australian workforce overall.
- Growth a function of both **increase in demand** for tech sector occupations (including many high digital intensity roles), and **more occupations becoming part of the digital workforce** as the application of digital skills increases across the economy.
- **Moderate digital intensity** workers **account for 82% of the growth** (0.92M workers; 63% relative growth), accounted for mainly by **new occupation groups entering this category**, with 0.9M moderate intensity workers in 2021 being in occupation groups that were low digital intensity in 2016.
- **High digital intensity** occupation group have **remained stable** over the last 5 years, but with **significant growth in volume of workers** in these occupation groups. Relative growth rates between 20% and 83% from 2016 and 2021 has resulted in an increase of 0.2M workers in this category.
- Despite **net decrease in the low digital intensity** workforce, many have advanced into the moderate intensity workforce, and there were over **0.35M workers entering this group in 2021 whose digital intensity was very low in 2016**.

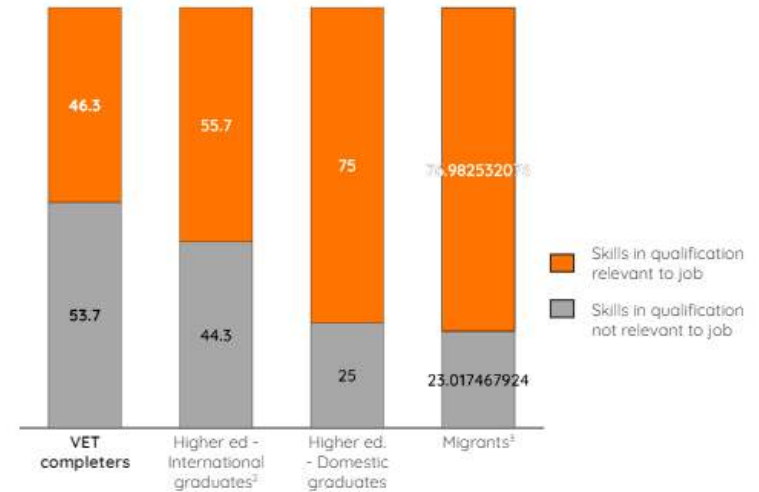
VET a lagging partner for digital intensive roles

Highest level of education obtained by digital intensity of occupation (%)



Digital skills learned in qualification used in job role¹

% of employed graduates/migrants, 2021



There is great potential for **VET sector to play a more substantial role** in meeting the economy's growing demand for digital workers, both in high digital intensity roles, and in enabling access to agile and responsive skilling for most roles across the economy.

Evidence indicates VET completers in Information Technology (IT) fields of study have the second lowest levels of job relevance compared to other VET fields of study, and **lowest levels of skill relevance for jobs compared to higher education graduates and migrants**.

For those completing courses to upskill in existing roles, only 30% of completers in IT fields of study report that training improved their skills, with **suboptimal rates across all fields of study ranging from 25% and 58%**.

Skills for jobs are changing with a greater level of digital ability

Many **low and moderate intensity** digital occupations have experienced **rapid increases in intensity** over the 5 years to 2021, as the importance of extended digital skills in non-technology occupations grows. Examples include:

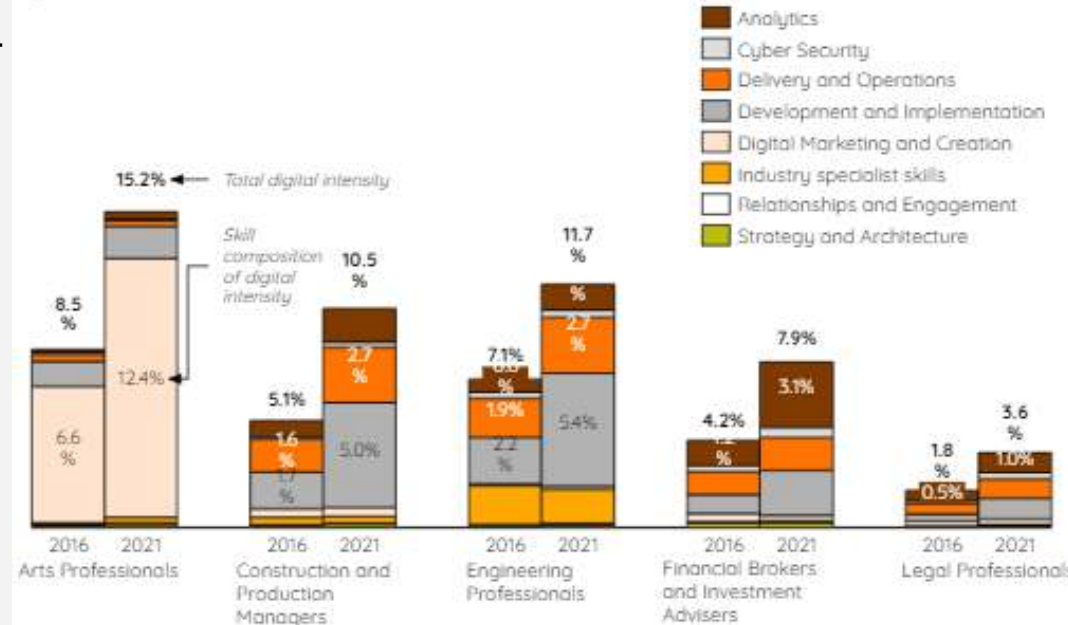
- **Development and implementation skills** (including programming languages and development platforms): **2.9-fold increase** in demand for Construction, Distribution and Production Managers, and **2.5-fold increase** for Engineering Professionals
- **Analytics: 2.6 -fold increase** in demand in Financial Brokers and Dealers, and Investment Advisers, and **2-fold increase** in Engineering and Legal Professionals
- **Digital marketing: 1.9 -fold increase** for Arts Professionals

Changes in the application of extended digital skills across the economy are **likely to continue**, creating a need to ensure:

- new graduates are trained in the right digital skills to meet industry needs
- existing workers have accessible mechanisms to continue acquiring/ advancing their digital skills to meet industry needs.
- Digital skilling happens at pace to meet rapid changes in digital skill needs (e.g. ChatGPT), and delivers skills in the right locations across Australia.

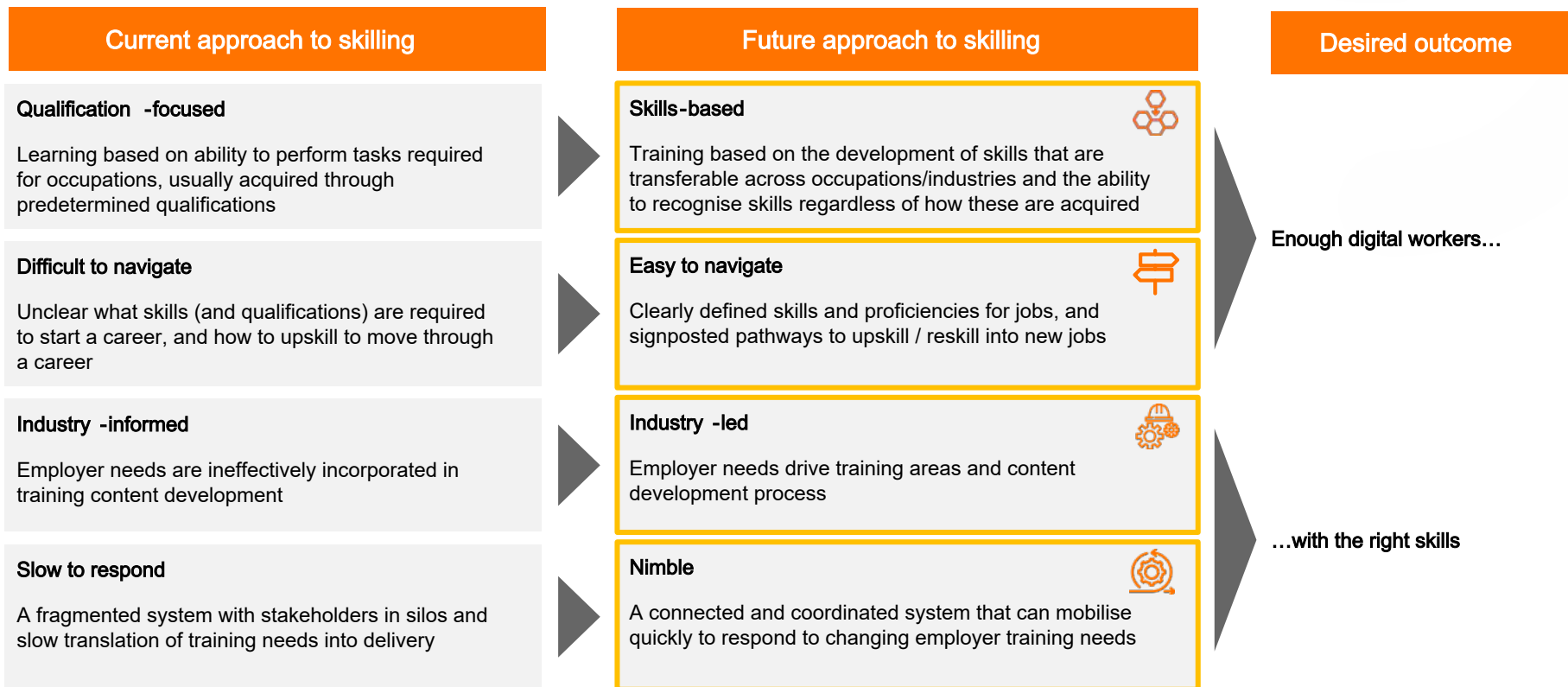
Digital skill composition for occupations with greatest digital intensity increase 2016 to 2021

Digital intensity (%) and skill composition, 2016 and 2021, for top 5 ANZSCO occupations by digital intensity growth



Source: Lightcast 2021; Nous analysis

To meet the demand for digital skills, four key shifts are needed

1
7

Some Conclusions

- Every job is a digital job yet we don't have a System for VET optimised to deliver the required digital skills
- Job roles are more than ever based on skills not occupational competencies
- Digital skills pathways enable skills to be recognised across industries and the economy - drives labour mobility, innovation and productivity
- Digital literacy is the base on which digital intensive skills are built
- The need to support RTOs to deliver digital and tech training at different levels @ scale