Growing Australia's digital workforce

June 2023

DIGITAL SKILLS ORGANISATION

Australia's Digital Workforce

01

Demand for digital skills is increasing across the economy

Technology has transformed the way we work and do business. The increasing ubiquity of digital tools across all roles and industries has meant almost all workers now require at least baseline digital literacy to perform their job.

This has been driven by increasing digital transformation of business, and the non-market sector, with associated trends in automation, artificial intelligence, big data, and the growing threat of cyber attacks.

More acutely, the forced and rapid transition to remote work accelerated the need for all workers to be able to use and interact with digital communication and collaboration platforms, and to have a degree of cyber literacy. These trends have increased the demand for digital skills across the economy and growth in the level of digital skills required.

Digital skills are skills required to be digitally engaged; that is to "identify and use technology (including hardware and software) confidently, creatively and critically."[1] Digital skills are separated into baseline digital skills (e.g. digital literacy) and specific digital skills which are required for more technical jobs.[1]

The analysis in this report has defined eight categories of specific digital skills (see Appendix A) and the digital intensity of roles based on the proportion (or percentage) of skills demanded for a role that are specific digital skills.

The digital intensity of the workforce has increased by 12 percent over the last five years. Development and Implementation; Delivery and Operations; and Analytics, have dominated demand for digital skills over this period. See Exhibit 1.

This demand is in addition to the baseline digital skills of literacy and enterprise which are considered a requirement across the vast majority of the Australian workforce. See Appendix A for more detail on digital skill definitions.

This growth means the digital workforce now accounts for half of Australian workers

The analysis of the eight categories of specific digital skills and the two categories of baseline digital skills enabled the identification of three types of digital workers: digital expert workers, digitally enabled workers and digitally informed workers. The digital workforce encompasses the digital expert workers and digitally enabled workers.

Digital expert workers require specific digital skills as central functional skills. They comprised seven percent of the workforce in 2021, including ICT network and support professionals; and business and systems analysts, and programmers.

Digitally enabled workers rely on digital skills to augment their functional skills, and comprised 43 percent of the workforce in 2021, including occupations such as engineering professionals; legal professionals; sales, and marketing; clerical and office support workers; and machine operators.

It is estimated there were 6.6 million digital expert and digitally enabled workers in Australia in 2021 (representing 50 percent of the country's labour force). See Exhibit 2.

The remaining 50 percent are **digitally informed workers**, requiring digital literacy and enterprise skills but negligible need for specific digital skills. In 2021 they included occupations such as real estate agents, midwifery and nursing professionals, and plumbers.

Digital worker definitions

The Digital workforce comprises:

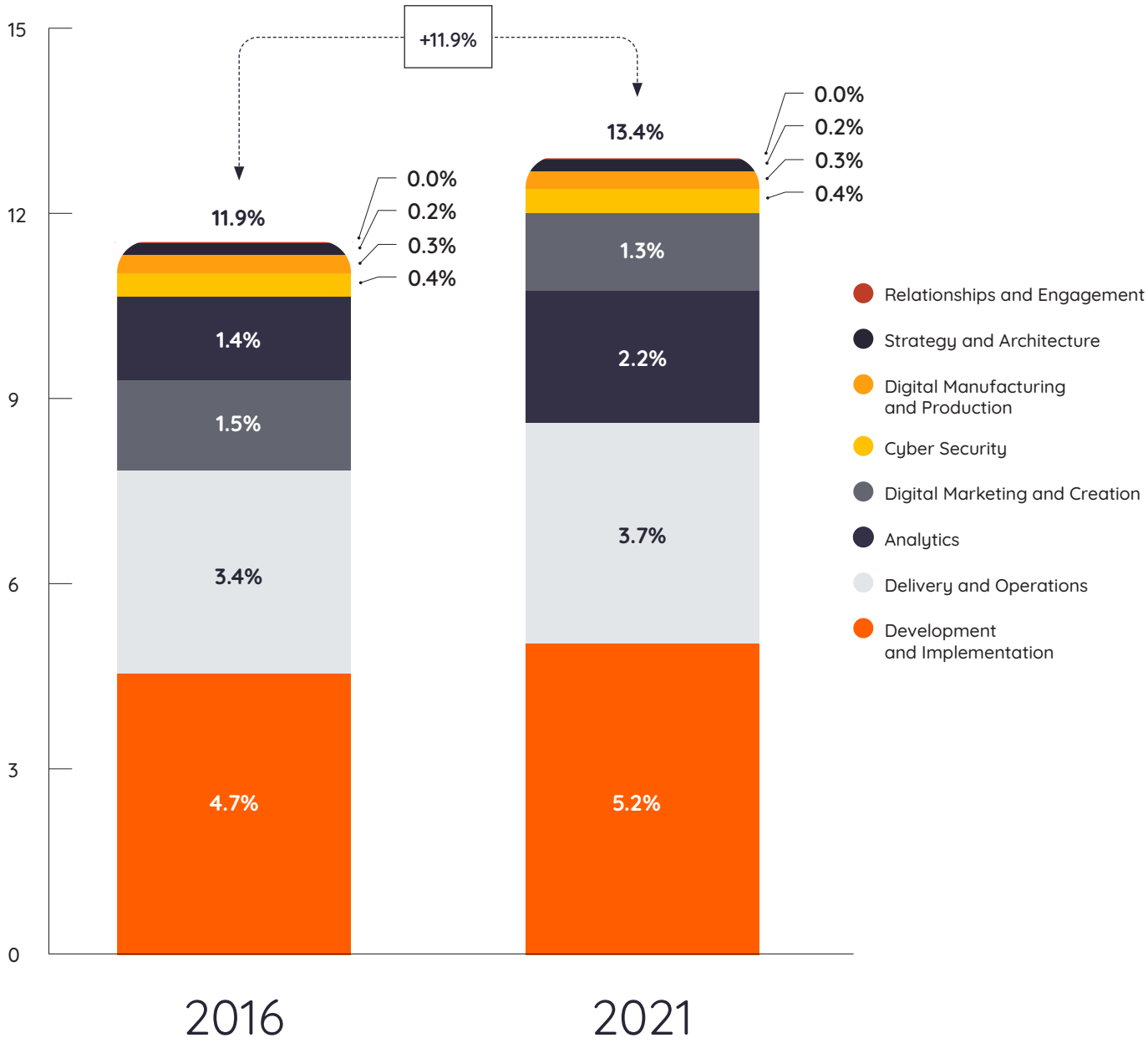
- **Digital expert workers** – those requiring specific digital skills as central functional skills
- **Digitally enabled workers** – those relying on digital skills to augment their functional skills

The remainder of the workforce are considered digitally informed workers, requiring digital literacy but negligible need for specific digital skills.

1. National Skills Commission, 'State of Australia's Skills 2021: now and into the future. Digital skills in Australia and internationally

Exhibit 1: The increasing demand for digital skills*

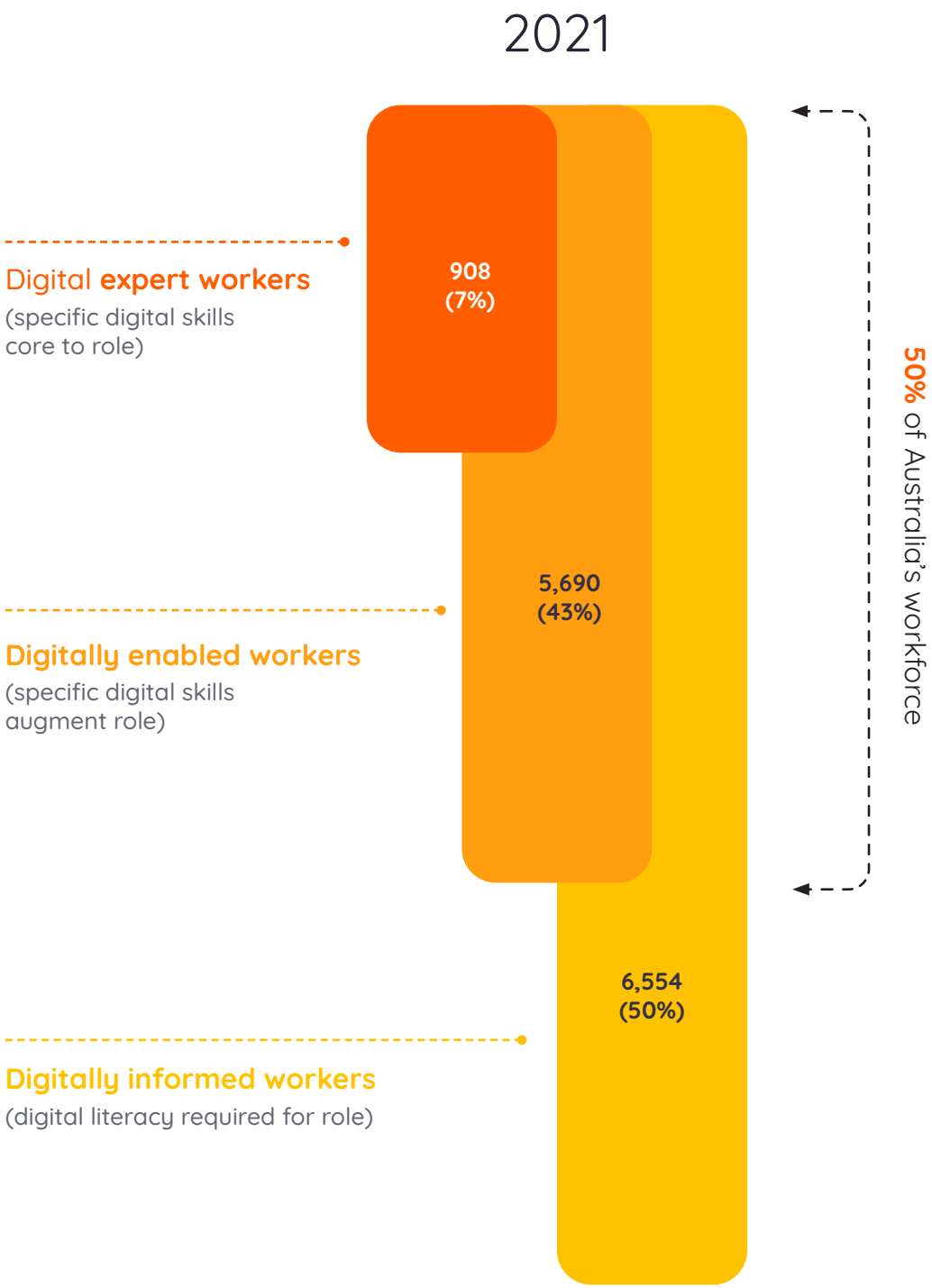
Demand for digital skills (% of all skill mentions), 2016-2021



Source: Nous analysis; Lightcast, ABS
*Notes:
a. See Appendix A for methodology.
b. Totals may not add due to rounding; difference between 2016 and 2021 may not compute due to rounding.

Exhibit 2: The composition of Australia's workforce*

Digital workers by segment ('000 [% of whole workforce]), 2021



Source: Nous analysis; Lightcast, ABS
*Notes:
a. See Appendix A for methodology.
b. Totals may not add due to rounding.

Demand for digital expert workers and digitally enabled workers is expected to grow

The growth in demand for **digital expert workers** is expected to continue to grow at a faster rate than the economy over the next five years.

This growth is due to two factors. First, a rapid increase in demand for technology occupations contributes an extra 184,000 digital expert workers. Second, increasing demand for digital skills in non-technology roles (e.g. marketing and arts professionals) contributes an extra 215,000 workers through these occupations forecast to progress to digital expert roles by 2026. See Exhibit 3.

Increasing demand will see this segment of the workforce grow by 47 percent, from 0.9 million to 1.3 million, to comprise nine percent of the workforce in 2026. See Exhibit 4.

For **digitally enabled workers**, increasing reliance on digital skills to augment functional skills is projected to transform a range of jobs from informed to enabled, including Retail Managers; Farm, Forestry and Garden Workers; and Real Estate Sales Agents. This contributes an additional 558,000 workers into the digital workforce from these occupation groups alone. See Exhibit 3.

The projected decrease in the proportion of digitally informed workers highlights the increasing expectations of workers across the economy to be enabled. It also reinforces the need for baseline digital literacy across the economy to be the foundation for specific digital skills to be more productive and innovative. See Exhibit 4.

The forecasts to 2026 in this report are based on a continuation of 2016 to 2021 trend analysis. This analysis may underestimate the 2026 digital workforce profile. This is due to the inherent uncertainties of such future workforce estimates due to the difficulty projecting rapid economy wide uptake of digital skills and fast emerging digital technologies such as artificial intelligence, robotics and automation.

Exhibit 3: Occupation groups changing digital workforce segment, 2021–2026*

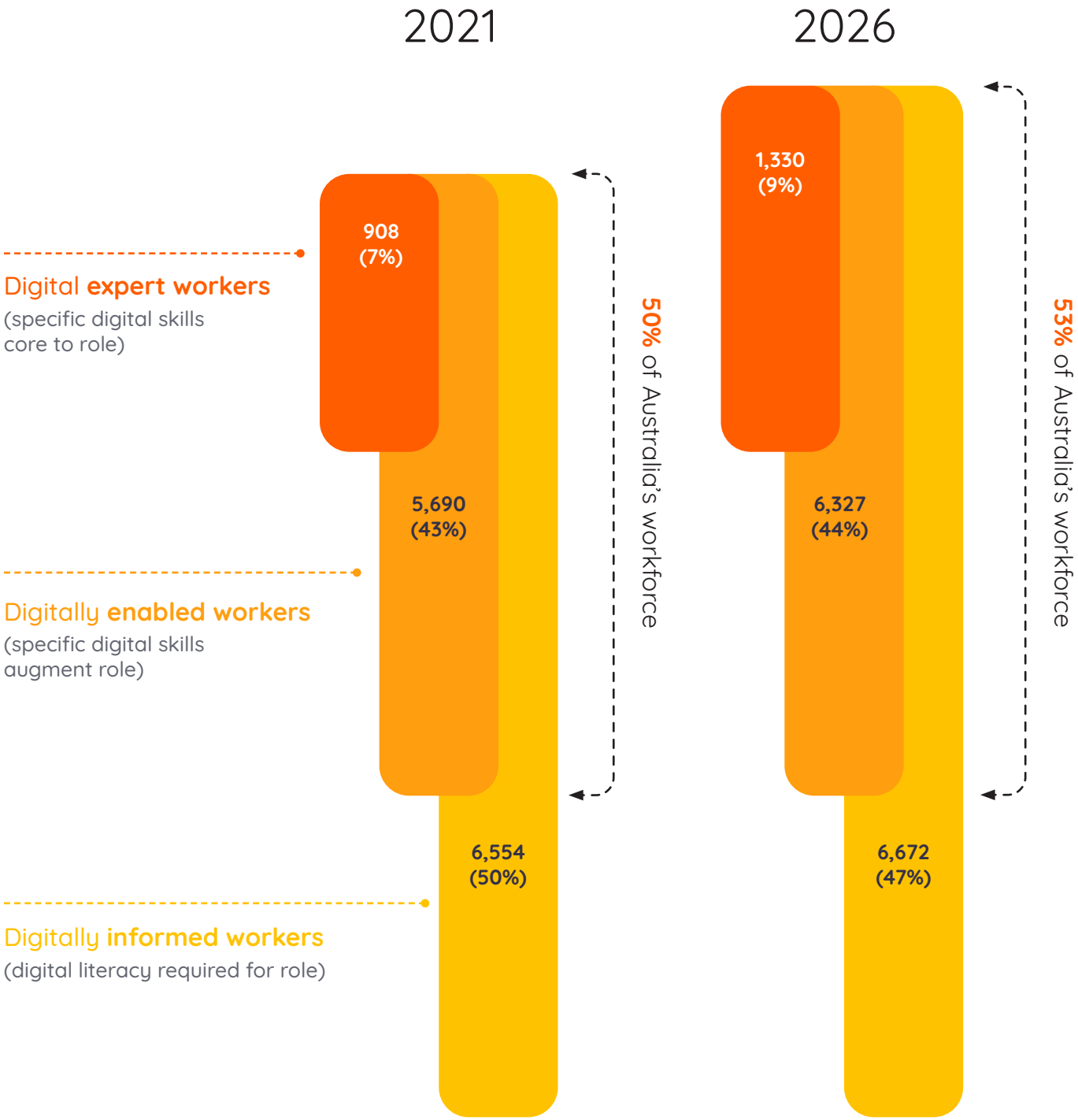
Select occupation group by digital intensity segment, 2016–2021

Occupation group	2021	2026 (Projected)	Projected size of workforce 2026 ('000s)
Retail Managers	Informed	Enabled	236
Real Estate Sales Agents	Informed	Enabled	120
Personal Services and Travel Workers	Informed	Enabled	90
Farm, Forestry and Garden Workers	Informed	Enabled	112
Sales, Marketing and Public Relations Professionals	Enabled	Expert	154
Arts Professionals	Enabled	Expert	61

Source: Nous analysis; Lightcast, ABS
*Notes:
a. See Appendix A for methodology.

Exhibit 4: The growing size of Australia's digital workforce by segment*

Thousands of workers, 2021–2026



Source: Nous analysis; Lightcast, ABS
*Notes:
a. See Appendix A for methodology.

DIGITAL SKILLS ORGANISATION

Click here to read more