

Katalis Market Insight

Training Indonesia's Digital Workforce

September 2022



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Acknowledgment

This report has been prepared by Katalis in partnership with:



Katalis acknowledges the input of Indonesian employers and Australian TVET providers who contributed through a series of interviews and survey of Australian TVET.

IA-CEPA ECP Katalis (Katalis) is a unique, five-year (2020-25) government-backed business development program unlocking the vast potential of economic partnership between Australia and Indonesia.

Executive Summary

Indonesia has one of the fastest growing digital services industries in the world. Home to over ten digital unicorns – digital companies valued at over USD 1 billion – and with over 100 million internet users, the digital economy is an important driver of Indonesia’s growth and development. Growth in the digital services sector is generating huge demand for digital and related business skills. New data developed by Prospera¹ identified 50,000 jobs requiring digital skills being advertised in the 6 months to June 2022, making digital skills the most in-demand in Indonesia.

Indonesia’s current workforce lacks the skills to meet existing demand. Research by SMERU in 2022 found that 50% of Indonesia’s labour force has basic to intermediate digital skills, while advanced digital skills represent less than 1%. Less than 2% of workers with a secondary, junior-secondary, or lower level of education, have received ICT skills training, while 32% of workers with a diploma or university degree have received training.²

The digital skills gap presents an opportunity for Australian technical skills and training providers. Australia’s Technical Vocational, Education and Training (TVET) sector is world leading. It aligns to industry demand and is focused on skills application, scalability and flexibility. Australian TVET providers are well placed to support Indonesian businesses to build their workforce capability, being a trainer of choice for Indonesian students.

This *Katalis Market Insight* provides an overview of the demand and supply of digital skills in Indonesia. Informing this Market Insight is original analysis of the demand for digital skills by Indonesian businesses based on all available job advertisements in Indonesia.³ The supply of

“By 2030, Indonesia needs 17 million+ tech talents to support the growth of the digital economy.”

Airlangga Hartarto
Coordinating Minister for Economic Affairs⁴

digital skills and training reflects findings from a survey of Australian TVET providers.⁵ A more detailed discussion of Australia’s TVET capability in Indonesia is available in a separate *Katalis Market Insight*.

Australian and Indonesian government support is available to close the digital skills gap. In 2020, the Indonesian and Australian governments entered a Comprehensive Economic Partnership Agreement (IA-CEPA) which opened new trade and investment opportunities for Australian TVET providers in the Indonesian market. Katalis, a program designed to support the implementation of IA-CEPA, is available to help connect Indonesian businesses with Australian TVET providers to close the skills gap in Indonesia. A new TVET Clearinghouse will be established in 2022 to support businesses to connect.

1 Prospera is an economic governance program based in Indonesia and funded by the Australian Government in Indonesia. See <https://prospera.or.id>

2 The SMERU Research Institute, Digital Skills Landscape in Indonesia, 2022, Indonesia https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwjkrky0ar4AhUQTt8KHYYIC_cQFn0ECAkQAQ&url=https%3A%2F%2Fsmeru.or.id%2Ffen%2Ffile%2F4519%2Fdownload%3Ftoken%3D0HU6OfQK&usg=AOvVaw3UHBk4RJP67YSIGhJ0s0NI

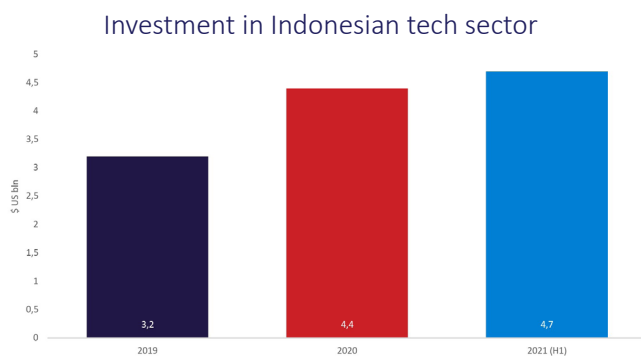
3 Prospera Labour Market and Jobs Model for Indonesia, 2022.

4 Monica Oudang, Landscape of digital skills demand in Indonesia, 29 June 2021 Yayasan Anak Bangsa Bisa Gojek. https://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/---ilo-jakarta/documents/meetingdocument/wcms_808837.pdf

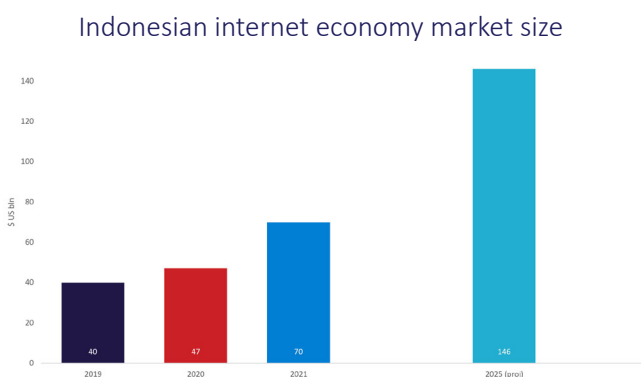
5 Katalis conducted a survey of Australian TVET providers in May 2022. Responses were received from 20% of all Australian TAFEs and small number of the more than 4000 Australian registered training organisations (RTOs). The survey was developed and conducted by Katalis in partnership with Equity Economics.

Context

The Indonesian economy is rapidly digitising. Already amongst the world's largest population of online users, COVID-19 accelerated adoption of digital services with no sign of reversal. Indonesia saw an additional 21 million new digital consumers coming online since the start of the pandemic. Between 2020 and 2021, the internet economy in Indonesia grew by 49% from USD 47 to USD 70 billion and is expected to reach USD 146 billion by 2025. Indonesia's digital growth is propelled by record investment in Indonesian tech start-ups. In the first half of 2021, USD 4.7 billion was invested into the Indonesian tech sector compared with USD 4.4 billion for the full prior year⁶ ensuring demand for digital roles is set to grow for years to come.

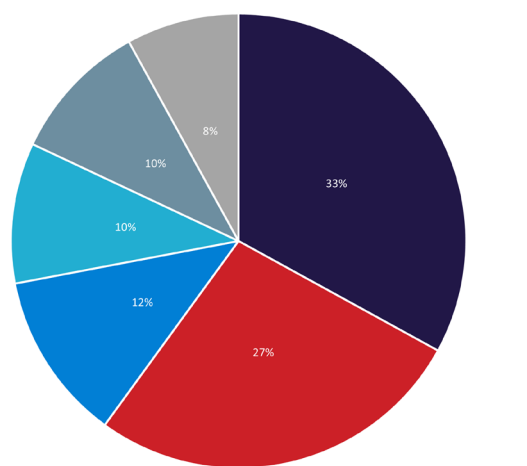


Source: Bain and Company



Source: Bain and Company

Advertised roles by industry, June 2021- June 2022⁷



Source: Prospera Analysis

E-Commerce is projected to drive growth in Indonesia's digital economy, with growth also projected in related sectors including transport and food, online media and online travel which is recovering from COVID contraction. In addition, services such as data warehousing, software development and software as service are key employers.

Projected growth in the Indonesian digital economy

	2019	2020	2021	2025 (proj)
E-commerce	USD 21 billion	USD 35 billion	USD 53 billion	USD 104 billion
Transport and food	USD 5.7 billion	USD 5.1 billion	USD 6.9 billion	USD 16.8 billion
Online media	USD 3.5 billion	USD 4.3 billion	USD 6.4 billion	USD 15.8 billion
Online travel	USD 10.1 billion	USD 2.6 billion	USD 3.4 billion	USD 9.7 billion

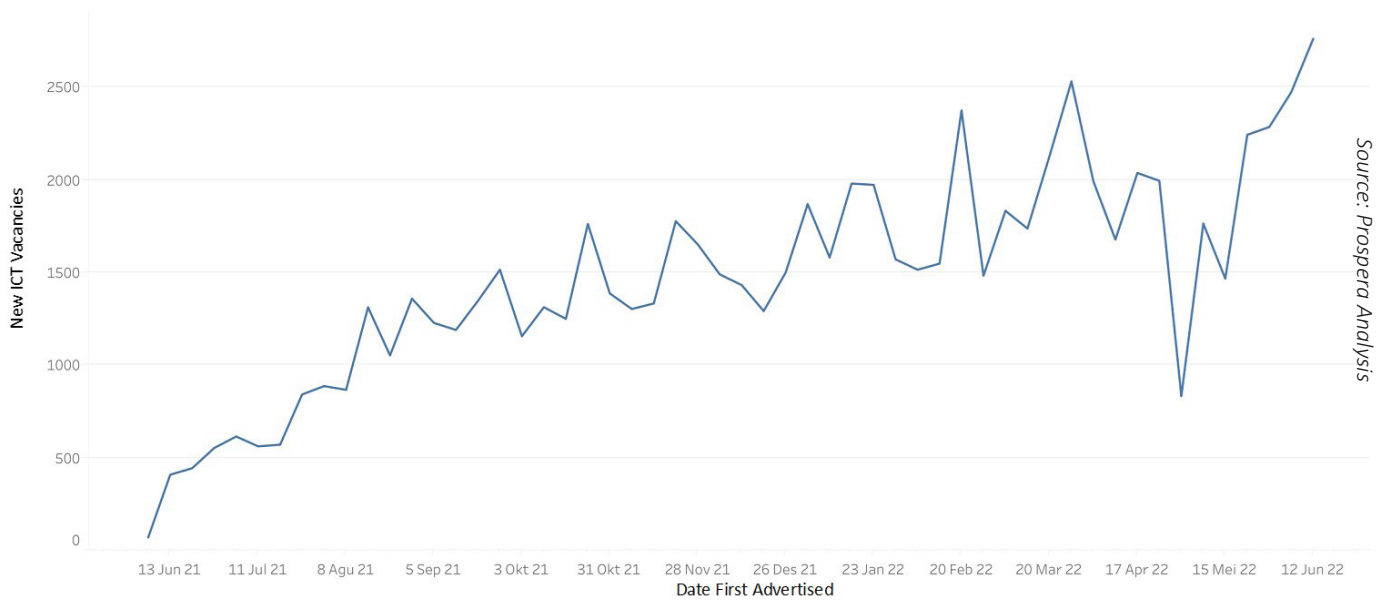
Source: Bain and Company

⁶ <https://www.bain.com/insights/e-economy-sea-2021/>

⁷ Prospera analysis

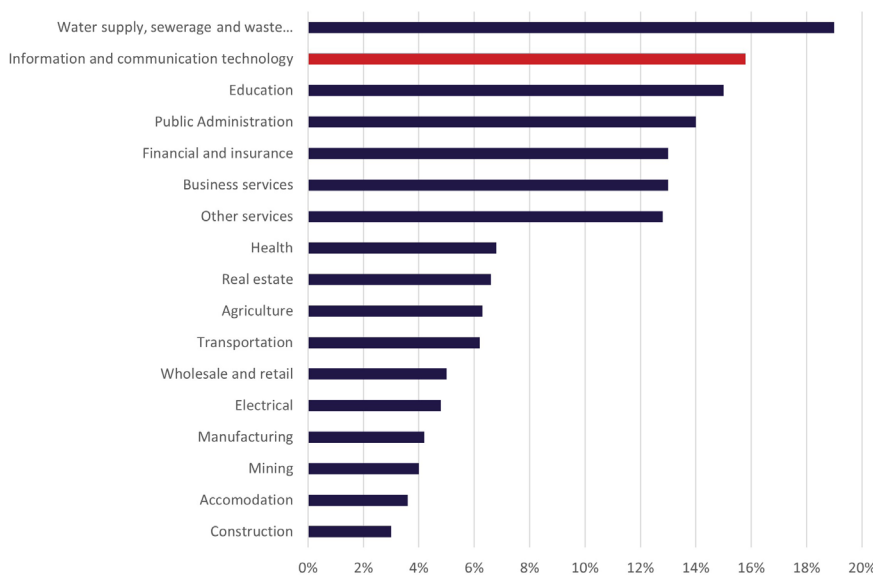
Rapid digitisation is creating extraordinary demand for skilled digital workers. In the 12 months to June 2022, nearly 80,000 new Information and Communications Technology (ICT) roles were advertised with 50,000 in just the last 6 months.

Indonesian job listings in ICT between 13 June 2021-12 June 2022



Source: Prospera Analysis

% roles advertised as remote, June 2021-June 2022



Despite this demand and a generation of digital natives, the digital skills sector in Indonesia is lagging. With a war for qualified talent, many employers take the route of recruiting graduates and providing further training in-house. Larger companies, with more extensive staffing needs may not be able to recruit in the Indonesian market instead opt to outsource to other countries such as India, presenting a major missed economic opportunity for Indonesia.

Source: Prospera Analysis

The Digital Skills and Training Opportunity in Indonesia

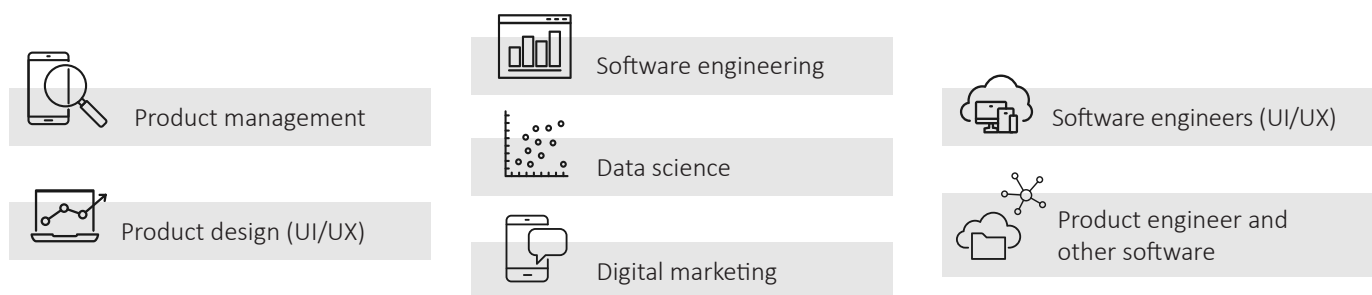
Jobs data confirms the skills and training most in-demand by digital businesses in Indonesia.

Key insights include: the need to focus on specific technical skills, as opposed to a level of qualification. Interviews show employers need intermediate and advanced digital skills as well as entry level skills and complementary skills, such as project management, leadership and business skills. The pay point and number of job applicants

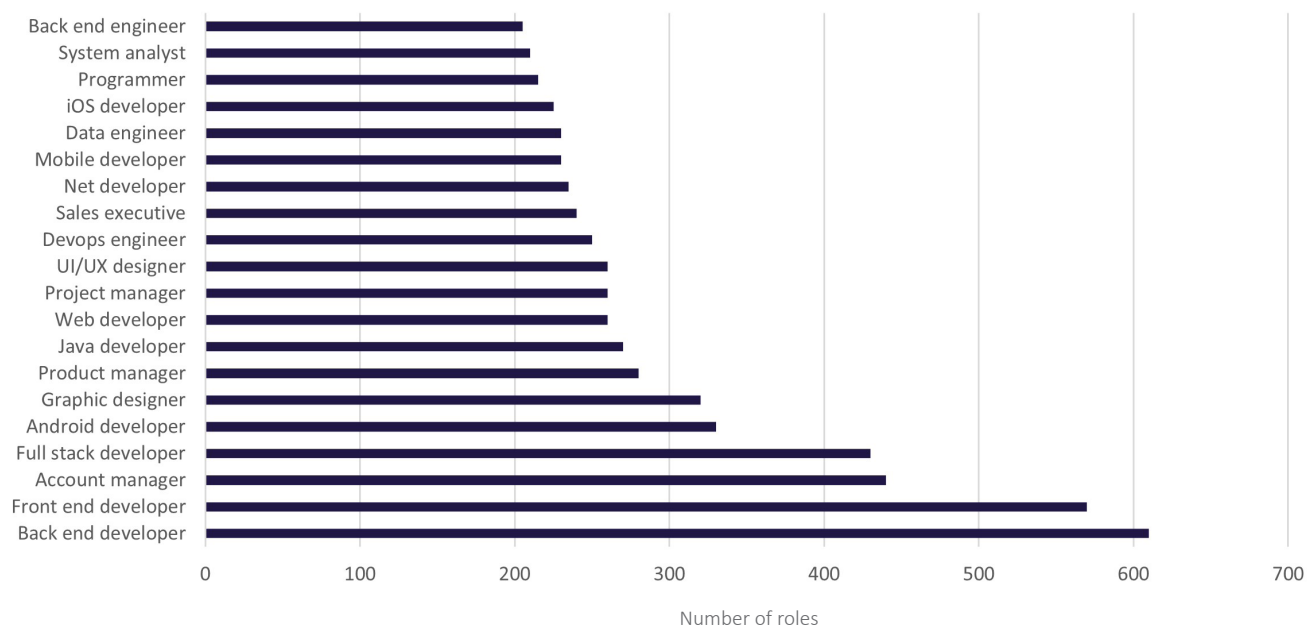
confirms high demand and growing capacity to pay for skills and training.

Digital employers are seeking specific skills, not necessarily high-level qualifications. Job advertisements for digital roles in Indonesia tend to be specific about the skills required, particularly in relation to programs and software, as opposed to the level of qualifications.

Typical in-demand intermediate and advanced digital skills training



Top 20 Advertised Roles in Digital Sector, June 2021 - June 2022



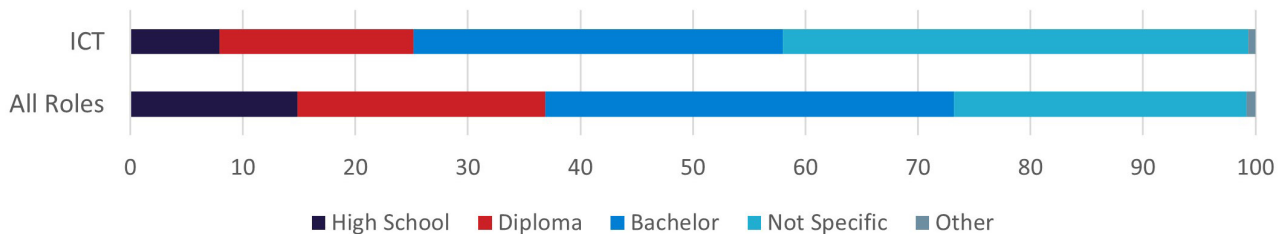
Employers value training that places an emphasis on practical and applied skills over theory.

Interviews with employers revealed that beyond entry-level technical skills employers are seeking other skills in their digital talent such as project management, creative thinking, problem solving and teamwork. This could be the capability to design digital information systems, product innovation and/or digital process improvements. Interviews also revealed demand for management training as a new generation of start-ups continue to grow. For graphic design, despite designers with good graphic skills there is a shortage of designers with the other required professional skills. Furthermore, employers associated Australian TAFEs with the ability to train staff in practical application of skills.

The sector is more flexible with regards to minimum qualifications.

While several employers require a degree or diploma, many recruiters are focussing instead on specific skills, rather than a qualification level. This points to the need for training in specific capabilities and data products or programs, as opposed to higher level qualifications. TVET programs can be well suited to skills development, applied and specific to a particular industry. Major digital platforms are recruiting from different sources to traditional academic institutions, including digital boot-camps where specific skills are being developed.

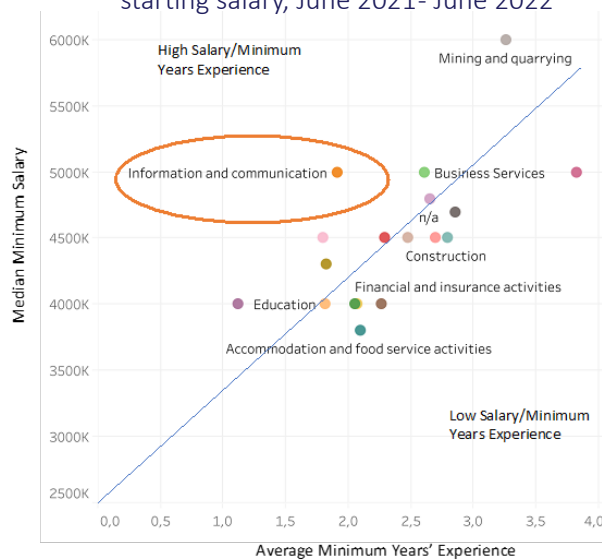
40% of ICT roles do not specify minimum qualifications
Minimum required qualifications for roles advertised



Source: Prospera Analysis

Digital skills are likely to be amongst the most commercially viable training courses in Indonesia. ICT roles are attractive employment options with higher-than-average starting salaries but lower than average minimum work experience. This suggests an opportunity to reach a group with relatively strong salary expectations, early in their careers. This presents long-term training opportunities, as well as a viable market for students and businesses to invest in skills and training.

Minimum years of work experience vs median starting salary, June 2021- June 2022

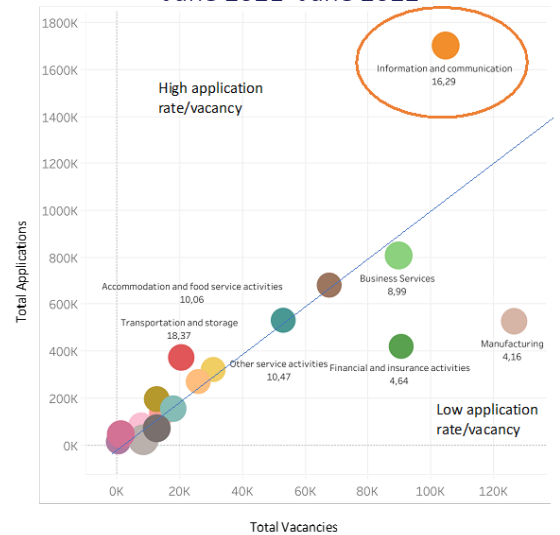


Source: Prospera Analysis

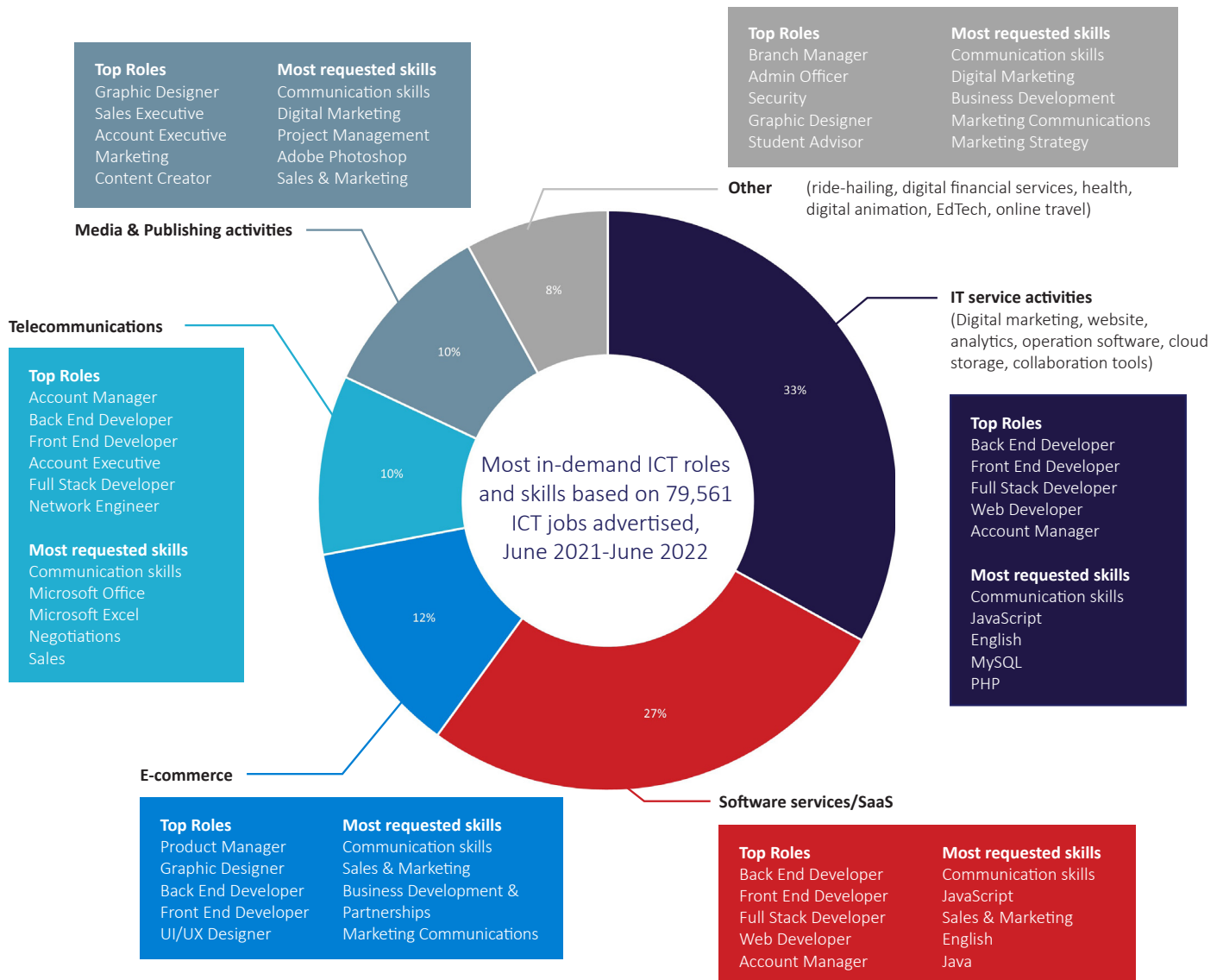
Digital jobs are highly sought after with above average applicant rates for each opening. The job market for digital services is highly competitive, with above average numbers of applicants for each position advertised. This points to the benefit of investment in skills and training to differentiate and build capability amongst individuals and the digital services workforce. High application rates also confirm the desirability of work in digital services.

Insights are available into the skill needs of major digital employers. Analysis of jobs data also identifies major industry segments seeking skills, which can inform the design of TVET skills and training to target and reach a larger cohort. This improves the commercial viability of training, while also meeting large areas of skills needs in Indonesia. Furthermore, interviews show employers associate Australian training with a superior emphasis on commercially useful applied skills. Demand is also highly concentrated in Java.

Application rates per vacancy, June 2021- June 2022

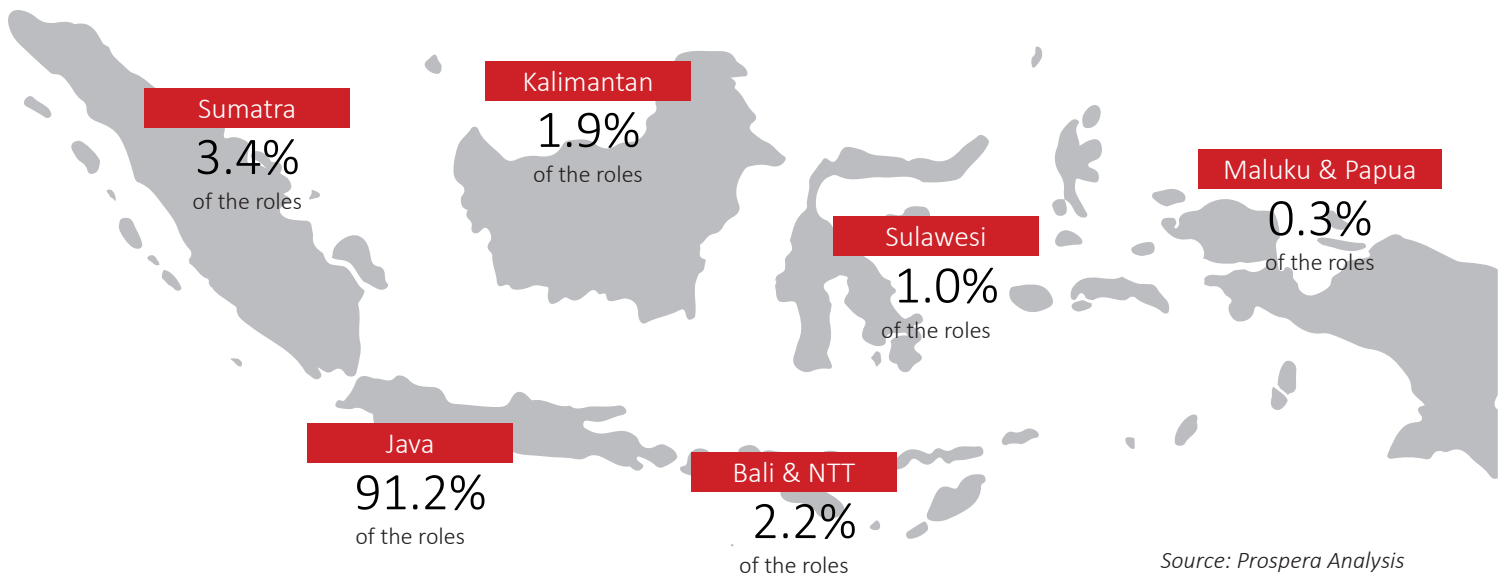


Source: Prospera Analysis



Source: Prospera Analysis

ICT Job postings by region (June 2021-June 2022)



Top recruiting companies vary with time as the industry continues to grow and develop, over a broad range of digital segments.

Top ICT employers by segment June 2021-June 2022

Software/app developers/SaaS

Recruiting Companies
 Majoo Teknologi Indonesia
 Sirclo
 HashMicro
 Simplefi Teknologi Indonesia
 Mekari
 Mid Solusi Nusantara
 Berlian Sistem Informasi
 Mitrais
 Cyberindo Aditama
 Olsera Indonesia Pratama
 HTC Global Software Services

Telecommunications

Recruiting Companies
 Smartfren Telecom
 Fiberhome Technologies Indonesia
 Karya Solusi Prima Sejahtera
 FiberStar
 Indonusa Telemedia

Media & Publishing activities

Recruiting Companies
 Kompas Gramedia
 Detik.com

Ride-hailing, health, digital animation, edtech, online travel, digital financial services: payments, remittances, insurance, lending.

Recruiting Companies
 Ruangguru
 Gojek
 Grab Taxi Indonesia
 Zenius Education
 LingoTalk
 Hangry

IT service activities
 (Digital marketing, website, analytics, operation software, cloud storage, collaboration tools)

Recruiting Companies
 PT Qtera Mandiri
 PT Berca Hardayaperkasa
 PT Nusantara Compnet Integrator
 PT Asian Sigma Technology
 NTT Global Data Centers
 Widya Inovasi Indonesia

E-Commerce

Recruiting Companies
 Shopee
 Somethinc – Beautyhaul
 Tokopedia
 Aruna
 Hypefast
 Dekoruma

Source: Prospera Analysis

Current and Emerging Indonesian Digital Training Offerings

Indonesia digital skills education faces 4 main challenges, namely: access, price, quality and scale.

To meet these challenges, Indonesia is seeing a growth in training formats – including degrees provided by government and private universities, diplomas delivered through private TVET providers, digital boot camps and VC backed online training offerings. There is also secondary education provided by vocational high schools called Sekolah Menengah Kejuruan (SMK).

Employers are increasingly turning to digital bootcamps to meet demand for talent.

While the number of digital boot camps has grown significantly over the past few years, gaps remain in providing high quality training, for example by providing foundations for future career movements from entry-level to middle management positions. In the University sector there is a demonstrated willingness to pay a premium for a joint degree qualification with an international partner.

Institution	Example digital training providers	Typical offerings
Private Universities	Telkom University (Telkomsel) Binus University (IBM) Pelita Harapan University Universitas Multimedia Nusantara (Kompas-Gramedia)	Local degree (AUD 2000-4000 p.a. plus AUD 2000-4000 upfront fee). Degree with international partner (AUD 5000-8200 p.a. plus international partner fee)
Government Universities	Bandung Institute of Technology Universitas Gadjah Mada Universitas Indonesia	Local degree (means tested between AUD 500-2500 p.a.) Degree with international partner (AUD 2000-3000 p.a. plus AUD 2500 upfront fee)
Private Polytechnics	LP3i Caltex Riau Politeknik (Chevron)	Diploma (AUD 1000-3000 p.a.)
Government Polytechnics	Politeknik Negeri Jakarta Politeknik Elektronika Negeri Surabaya	Diploma (means tested AUD 100-2000 p.a.)
Upper Secondary Technical education (SMK)	SMK Bintang Nusantara	No fee
Digital training start-ups	BinarAcademy (Indonesia), Hacktiv8 (Indonesia) Purwadhika (Indonesia)	AUD 100-4000 for a boot camp depending on the qualification
Digital Bootcamps	Coders Lab Impact Byte OneTwoCode	Digital marketing: AUD 1000-1500, Software engineering: AUD 2000-3000, Data science: AUD 4000
Online Courses	Various online providers	AUD 0-100 per course

Compiled sources

Investment in training remains a challenge in Indonesia, but funding opportunities are emerging.

With an estimated 900,000 digital workers in Indonesia⁸, employers are expected to spend AUD 135 million annually on staff training.⁹ In interviews Venture Capital (VC) funded digital start-ups had larger training budgets but were more sensitive to employee time commitments and will be looking for training specific to their needs. At entry level, the *Kartu Prakerja* program

offers jobseekers digital cash to purchase online courses up to a value of approximately AUD 100 to Indonesian job seekers. In 2022 more than 200,000 jobseekers completed short format 7-8 hour online technical and IT courses priced at between AUD 40-50 per course, representing an estimated market size of AUD 10 million.

⁸ <https://www.adb.org/sites/default/files/publication/700891/adbi-wp1258.pdf>

⁹ Assumes staff training budget of 1% of employment costs and employment costs of digital staff about AUD 14,000 per year and 900,000 digital workers.

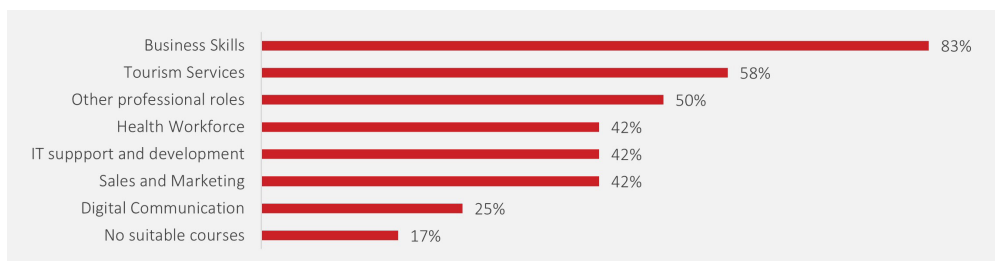
A Unique Opportunity for Australian TVET

The digital skills space presents a unique opportunity to build a TVET presence in Indonesia. As Australian TVET providers look to diversify their markets, including moving offshore, into new geographies and deploying new delivery models, Indonesia presents a priority market. 27% of Australian TVET providers who responded to a Katalis survey are already delivering skills and training in Indonesia. A further 55% have interest in entering the Indonesian market.

Australian qualifications are well regarded in Indonesia and by Indonesian students. Australia is Indonesia's top overseas study destination.¹⁰ 60% of TVET providers surveyed are already delivering skills and training to Indonesian students, including in business management, sales and marketing, tourism, health, software development and IT support. Innovative delivery models and making training available in Indonesia will only expand Australia's existing Indonesian market to a much larger populace. The prospect of achieving a partial credit or recognition towards an Australian qualification is likely to be motivating for Indonesian digital workers looking to upskill.

Australian TVET providers are well placed to deliver the range of skills and training models required. This includes online short courses for jobseekers, self-paced online modules for professional upskilling, digital bootcamps, customised workplace training and partnerships with polytechnics or universities to provide diploma or degree qualifications. While having a physical presence, even if small, is highly valued to create

Do you have existing courses suited to offshore delivery in the following areas?



Relevant Training delivered by Australian TVET to Indonesian students in Australia or remotely

- Business
- Sales and Marketing
- Digital Communications
- IT Support
- Software Development
- Cybersecurity
- Applied Blockchain
- Health and Tourism

the assurance to Indonesia that the operation is credible and sustainable, digital training formats and blended learning are increasingly acceptable. Two Australian TAFEs have Indonesian locations; others have local partners in Indonesia including Muhammadiyah Foundation, Binus University and LP3i Polytechnics. 60% of Australian TVET survey respondents indicated they can provide tailored training to meet the needs of specific businesses, with employer sponsored training models.

Existing courses provided by Australian TVET can meet immediate demand for skills. 87% of Australian TVET providers surveyed have courses suited for Indonesian delivery, including courses currently ready and available and those that could be delivered to meet the specific needs of an Indonesian audience within 1 to 24 months. The most common training is in business skills at 83%, while 42% have digital skills courses suited for Indonesian delivery currently available.

¹⁰ <https://www.statista.com/statistics/1272467/indonesia-tertiary-level-students-by-country-of-destination/>

Key Takeaways

The rapid expansion of Indonesia's digital services sector requires a massive expansion in digital skills and training to meet Indonesia's workforce needs.

There is an alignment between Indonesia's large digital skills gap and Australia's TVET offering. This includes skills and training credentials currently available in technical ICT and digital skills, as well as complimentary skills in business, product management, leadership and management.

Indonesian digital businesses are looking for new ways to train and skill employees and meet their workforce needs. While sourcing skills offshore has been necessary, there is interest in training the local workforce through innovative training modules, designed to meet a specific business need, while avoiding employees being offshore and away from work for extended periods. At the same time, digital businesses indicate a greater willingness to fund workforce training, relative to more traditional industries in Indonesia, as the demand for skilled team members continues to grow.

Australian training providers are ready to meet Indonesia's skills needs. 60% of Australian training providers surveyed provide courses tailored to the needs of specific businesses, working directly with firms to meet their skills requirement in-house, avoiding the loss of staff for extended periods and filling skills gaps, with potential to feed into Australian qualifications over time.

With the support of the Indonesia and Australian governments, Katalis is establishing a bilateral TVET Clearinghouse to connect Indonesian employers with high-quality Australian TVET providers that can meet their specific training needs.

Katalis can help you connect. If you are an Indonesian digital services business looking to deliver training to your employees, contractors or clients, or an Australian TVET provider able to deliver digital skills and training in the Indonesian market, contact Clarice Campbell, clarice.campbell@iacepa-katalis.org to discuss opportunities.

A mutually beneficial trade and development opportunity

Indonesian landscape

- Limited quality domestic TVET
- Providers failing to meet industry needs
- Limited public awareness of TVET
- High cost of overseas training
- Looking for step-change, not business as usual

Australian TVET opportunity

- Respected TVET sector
- Highly suitable course offerings
- Improving online offering and blended formats
- Seeking closer ties to Indonesia
- Looking to diversify markets