

Upskilling for Digital Connectivity in the Pacific

Foundations for a Resilient, Inclusive Digital Future

26 Aug 2025

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Recap from Previous Session: Key Challenges

- Geography & Scale: dispersed islands, small markets → high cost per user.
- Infrastructure Gaps: limited submarine cables; satellite dependence.
- High Costs: broadband ~25–50% above global average in Pacific SIDS.
- Skills Shortage: too few trained engineers for design, rollout, and maintenance

Context & Importance

- Internet connectivity is only as strong as the people who build, run, and maintain it
- Pacific SIDS face shortages in skilled ICT professionals, often relying on external contractors
- Upskilling is crucial for digital sovereignty, resilience, and inclusive growth

Current Skills Gap

- Shortage advanced training (cybersecurity, system design) among the ICT workforce
- Heavy reliance on donor-funded, external expertise for submarine cable projects and ISP operations
- Brain drain: many trained Pacific ICT workers migrate to AU/NZ

Why Upskilling Matters

- Supports local ownership of digital infrastructure
- Reduces dependency on costly foreign contractors
- Builds resilience in disaster recovery (e.g., faster response after cable breaks, cyclones)
- Expands employment pathways in digital economy (telecoms, ISPs, cloud services)

Focus Areas for Training

- Internet Services- ISP operations, broadband rollout, troubleshooting
- Network Design & Engineering- IP networks, submarine cable landing stations, backbone resilience
- System Design & Operations- data centers, cloud services, cybersecurity, IoT/5G integration
- Customer-Facing Services — helpdesk, community Wi-Fi management, digital literacy programs

Regional Opportunities

- APNIC Foundation's Digital Leap/ Switch (Capabilities Strategic Pillar) and ISIF Asia
- APNIC Academy- technical training for Pacific engineers
- University of the South Pacific (USP)- Cisco Academy partnerships in cybersecurity & networking
- Pacific Skills Partnership (ADB/World Bank)- opportunities for vocational ICT programs
- Private Sector Engagement — ISPs and telcos can co-invest in training local technicians
- Australia – PacificAus Skills & Regional Training Initiatives
  New Zealand – Skills Building Programs

Professional Certifications by Training Category

Internet Services (ISP operations, broadband rollout, troubleshooting)

- Cisco: **CCNA** (Cisco Certified Network Associate) – fundamentals of ISP/network ops. **CCNP** Enterprise – advanced ISP routing, switching, troubleshooting
- Juniper: JNCIA (Juniper Networks Certified Associate) – service provider basics
- Nokia: Nokia NRS I & II (Network Routing Specialist) – broadband and IP service provider routing
- Fiber Broadband Association: Certified Fiber Optic Technician (CFOT) – fibre broadband deployment & testing

Cont. Professional Certifications

Network Design & Engineering (IP networks, submarine cable landing stations, backbone resilience)

- Cisco: **CCNP** Service Provider – large-scale ISP and backbone design. **CCIE** Enterprise/Service Provider – expert level network design
- Juniper: JNCIP-SP (Professional Service Provider) – carrier-grade network design
- Nokia: Optical Network Certification (ONC) – DWDM/optical backbone networks
- Submarine Cable/TeleGeography/CFOS: Submarine Cable Engineering Certification (via Submarine Telecoms Forum / CFOS courses) – landing station ops & resilience

Cont. Professional Certifications

System Design & Operations (Data Centers, Cloud, Cybersecurity, IoT/5G)

- CompTIA: **CompTIA Server+** – data center operations. **CompTIA Security+** – baseline cybersecurity
- AWS (Amazon Web Services): **AWS Certified Solutions Architect** – cloud system design. AWS Certified SysOps Administrator – operations in cloud
- Microsoft Azure: **Azure Administrator Associate** – cloud operations. Azure Solutions Architect Expert – cloud design & scaling.
- Google Cloud: Google Associate Cloud Engineer
- Cybersecurity (ISC², EC-Council): **CISSP** (Certified Information Systems Security Professional) – advanced security. **CEH** (Certified Ethical Hacker) – penetration testing
- 5G / IoT (Telecom vendors): **Nokia Bell Labs 5G Certification** – 5G networks, IoT integration. **Huawei HCIA-5G** – 5G network fundamentals

Cont. Professional Certifications

Customer-Facing Services (Helpdesk, Community Wi-Fi, Digital Literacy)

- CompTIA: **CompTIA A+** – helpdesk, troubleshooting, hardware/software support. **CompTIA ITF+ (IT Fundamentals)**– digital literacy starter cert
- Microsoft: Microsoft Certified: Modern Desktop Administrator Associate – workplace support
- Cisco: Cisco IT Essentials – basic ICT support, often used in schools/community Wi-Fi training
- ICDL (International Computer Driving Licence): ICDL Workforce Certification – digital literacy (widely used in developing regions)
- Google: Google IT Support Professional Certificate – entry-level helpdesk & support skills

Cont. Professional Certifications

Project/ Program Management

Project Management Institute (PMI):

- Project Management Professional (PMP): for experienced project managers.
- Certified Associate in Project Management (CAPM): beginner level
- PMI Agile Certified Practitioner (PMI-ACP): Focuses on Agile methodologies.
- Program Management Professional (PgMP): For managing programs
- PMI Risk Management Professional (PMI-RMP): Specializes in project risk management
- PMI Scheduling Professional (PMI-SP): For those focusing on project scheduling.

Scrum Alliance:

- Certified ScrumMaster (CSM): for Agile practitioners, focusing on the Scrum framework.

AXELOS:

- PRINCE2 Foundation/Practitioner: A process-based approach to project management, popular in the UK and Europe.

CompTIA:

- CompTIA Project+: An entry-level certification for individuals managing projects

APNIC Academy

Learning Pathways

https://academy.apnic.net

Online courses



Gain a certificate of achievement with self-paced online learning courses.

Virtual labs

Hands-on e-learning using multiple cloud-based instances of virtual machines and network topologies.

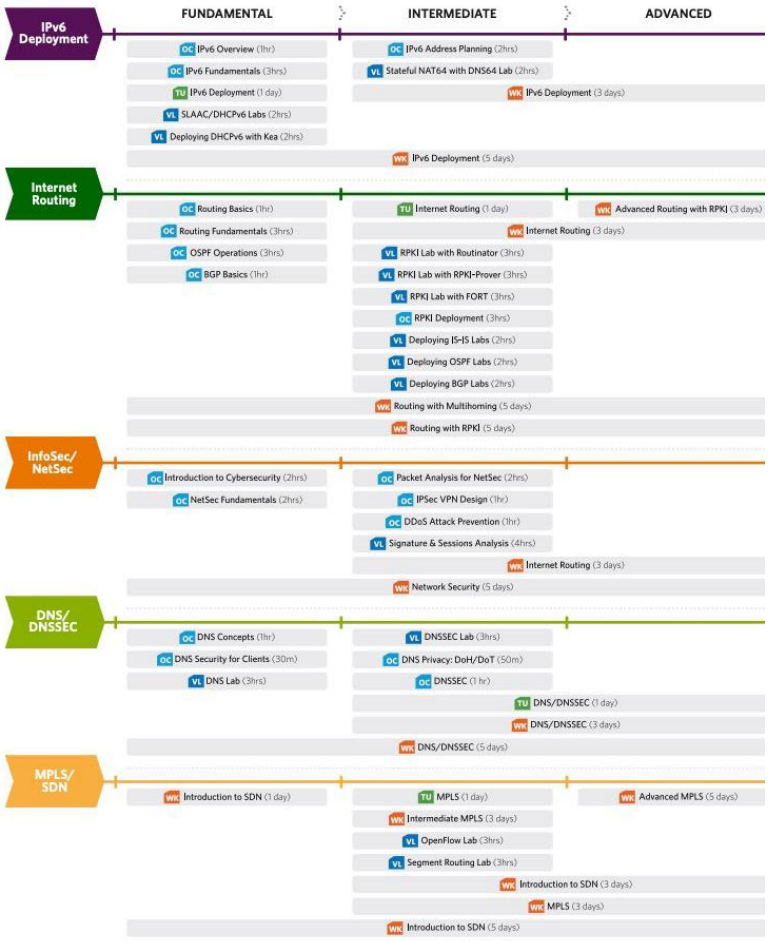


Find an expert on the Technical Assistance platform.

Training Events



Register for a range of upcoming online, face-to-face and hybrid events.



Investment Case

- Every $1 invested in ICT skills yields $6–10 in economic returns through productivity and new jobs
- Upskilling reduces service downtime costs after disasters (e.g., Tonga 2022 cable cut)
- Workforce development = long-term sustainability for donor-funded digital projects

Policy Recommendations (1–3 Years)

- Establish national ICT skills strategies aligned with connectivity plans
- Mandate local workforce participation quotas in telecom projects
- Fund Technical & Vocational Education and Training (TVET) in ICT
- Incentivize ISPs/telcos to offer apprenticeships & on-the-job training

Future Outlook (5–10 Years)

- A homegrown pool of ICT engineers designing and managing networks
- Stronger cyber resilience and digital sovereignty
- Pacific Islands as regional hubs for niche ICT services (cloud, cybersecurity outsourcing)

Conclusion

- A connected Pacific needs a skilled Pacific
- Upskilling is the most sustainable investment to ensure connectivity translates into resilience, jobs, and growth

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Discussion